THE

DENTAL *Digest*

SEPTEMBER, 1942

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THE DENTAL Digest

VOL. 48 NO. 9

SEPTEMBER, 1942

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About Our CONTRIBUTORS

JAMES S. MILLER, D.D.S. (Pennsylvania College of Dental Surgery, 1905) has written for us before on the optical system of denture construction (January and August, 1938). In this month's article Doctor Miller explains certain refinements of his technique.

WILLIAM I. OGUS, D.D.S. is a graduate of George Washington University, the class of 1917. He served in the United States Navy from 1917 to 1919. From 1930 to 1941 he was Lieutenant Commander U. S. N. R. (S) consultant at the U. S. Naval Hospital, Washington, D. C. Doctor Ogus was a graduate student at Northwestern University in 1923, and pioneered with Captain Alfred Chandler and Doctor Sidney S. Jaffe in the development of the technique for immediate denture construction. Since 1924 he has been developing electrosurgical techniques for dentistry and is the director of a postgraduate school on the subject. Doctor Ogus likewise developed vinethene anesthesia for dental uses and for war surgery. He has twice before contributed to this magazine.

IRVING E. LABY, D.D.S. (Chicago College of Dental Surgery, 1919) described for us his practical MODIFIED PORCELAIN JACKET CROWN in June, 1936 and again in July, 1939 he contributed an article on PORCELAIN-OCCLUSAL GOLD CAST CROWN. His present article is in the trend of current dental interest.

HERMAN MEYERS, D.D.S. is a graduate of the University of Pittsburgh, the class of 1917. Doctor Meyers specializes in exodontia. In November, 1941, he published an article in this magazine on DIFFERENTIAL DIAGNOSIS.

SAMUEL M. ROBBINS, D.D.S. (Western Reserve University School of Dentistry, Cleveland 1924; graduate work, New York University, 1941) is a general practitioner. Doctor Robbins presented a clinic at the 1933 meeting of the American Dental Association in Chicago on the use of a handpiece of his construction for making slice preparations in bridgework.

WILLIAM WARD TRACY has his D.D.S. from Columbia University School of Dental and Oral Surgery. Doctor Tracy has a general practice. In December, 1939, he described for us A RESTORATION FOR MAXILLARY INCISORS.

The Optical System of Denture Construction

JAMES S. MILLER, D.D.S., Trenton, New Jersey

PHYSIOLOGIC OCCLUSION in full upper and lower dentures has been defined by David W. McLean, thus: "Occlusion, in its broader meaning, may be termed the closure maintained by the mandibular and maxillary dentures, not only in the static centric relationship, but throughout the full range of the mandibular movements incident to masticatory function." I concur in this, and advocate, in making dentures, the registration of mandibular movements with an agency that will not only give condylar inclination but will also show graphically the intermediary movements between centric occlusion and extreme lateral and protrusion. Such an agency is a ray of light which traces on the screen the elevations and depressions of the glenoid fossa during the movements of the head of each condyle.

The construction of full upper and lower dentures may be divided into two categories: One class of dentures is made to conform anatomically and physiologically to the mouth, resulting in physiologic occlusion. The other class is that in which anatomy, physiology, and all biologic laws of occlusion are disregarded. In the first class the dentures were made for the mouth, in harmony with the temporomandibular articulation and the curve of Spee in each case; whereas, in the second class an effort is made to adapt the full upper and lower dentures anatomically; the biologic and physiologic principles of occlusion are ignored, so that Nature destroys some of the hard and soft tissues to permit the remainder to mold itself to the dentures.

Fig. 1 represents the right lateral view and Fig. 2, the left lateral of vulcanites that were in centric occlusion in the articulator and in the try-in in the mouth. After vulcanization, the cases were placed back into the articulator with the visible indications for grinding to the angles obtained from the patient. Fig. 4 represents full upper and lower acrylic dentures after processing; they were also in centric occlusion in the articulator and in the try-in in the mouth. This distortion of the teeth takes

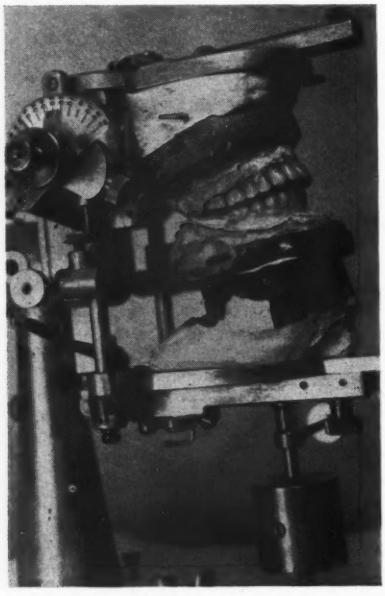


Fig. 1—Right lateral view of full upper and lower dentures after vulcanization.

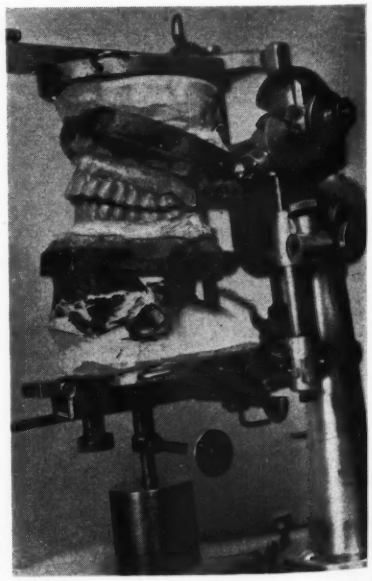


Fig. 2—Left lateral view of full upper and lower dentures after vulcanization. These dentures were in centric occlusion in the articulator and in the try-in in the mouth.

DIGEST

Precise registration of the condylar path is of utmost importance in denture construction. Registration must be accomplished by a method that is graphic and will not only give the condylar inclination but also the intermediary direction of the condyle moving in the glenoid fossa. Only thus can the curve of Spee, so essential in physiologic occlusion, be obtained.

The method of registration advocated is had in the use of a ray of light which traces on a screen the elevations and depressions of the glenoid fossa during movements of the head of each condyle.

The degree of right and left condylar inclinations is recorded, showing the registration by means of a ray of light in one hundred cases.

An experiment is suggested whereby it may be demonstrated how distortion takes place when dentures are finished without grinding to the angles obtained from the patient, or when grinding is done without registration of the condylar path. The more grinding that is done in the mouth, the greater is the loss of vertical dimension.

The relation of the curve of Spee to physiologic occlusion is explained.

place in every case, whether vulcanite or acrylic is used; whether the dentures are made in commercial laboratories or in private dental offices; whether the dentures are vulcanized or processed in the conventional or so-called special vulcanization or processing method. The result is always more or less the same as is seen in Figs. 1, 2, and 3.

Experiment

Any practitioner can convince himself of the facts stated by the following experiment:

1. Obtain two cast bronze mounting plates, at least one sixteenth of an inch in thickness. Pour models with the mounting plates attached.

2. Mount the models in any articulator (whether plane or anatomic).

3. Set up the teeth and try in the mouth in the usual manner.

4. Vulcanize or process the cases by any method preferred.

5. Return to the articulator. (If an anatomic articulator is used, lock the artificial condyles in centric occlusion.) The result will resemble Figs. 1, 2, and 3.

Let us see what takes place when dentures, such as are shown in Figs. 1, 2, and 3, are finished without grinding to the angles obtained from the patient or when grinding is done without registration of the condylar path. When placed in the mouth, these dentures will be in centric occlusion as shown in Fig. 4, provided centric occlusion was obtained in the first place. The reason that such dentures are found in centric occlusion is that the variation in all these cases takes place between the palate and the denture of the upper and the underlying tissue and the lower. It is customary to place the two dentures in the mouth and have the patient close. There is then a slight movement of the upper and lower owing to malocclusion which is not visible to the naked eye, and centric occlusion seems good. In order to see the movement, it is necessary to attach the screen to the upper and the light to the lower denture, as shown in Figs. 5 and 6; then place the two dentures in the mouth and the ray of light will trace the movement on the screen,

[1]For a complete description of registration and transfer, see: Miller, J. S.: The Optical System of Denture Construction, Dental Digest, 44:340 (August) 1938.

One Hundred Cases Registered by Means of a Ray of Light[1]

Number of Cases	Right Condyle Inclination	Left Condyle Inclination	Number of Cases	Right Condyle Inclination	Left Condyle Inclination
3	20°	30°	1	20°	20°
2	70°	50°	1	25°	25°
1	55°	45°	5	30°	30°
4	50°	65°	3	35°	35°
3	40°	50°	15	40°	40°
2	35°	45°	9	45°	45°
4	85°	40°	15	50°	50°
2	45°	35°	13	60°	60°
1	—25°	+40°	5	70°	70°
2	0°	50°			
2	40°	25°			
2	40°	60°			
2	30°	50°			
3	70°	60°			

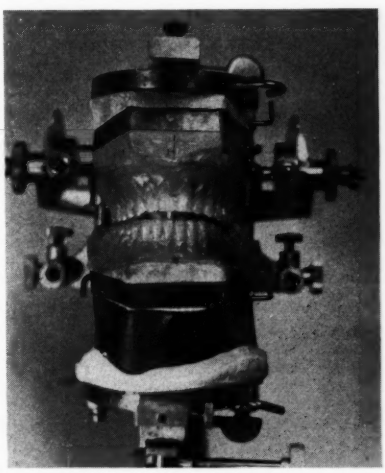


Fig. 3—Full upper and lower acrylic dentures after processing. They, too, were in centric occlusion in the articulator and in the try-in in the mouth.

demonstrating malocclusion in the finished dentures. When these dentures are permitted to remain in the mouth, trauma develops, particularly in the mandible. By cutting the periphery and grinding cusp interference, and by the gradual destruction of the hard and soft tissues, the remainder molds itself into the dentures. The patient then develops the most comfortable closure position, losing the lateral and often the protrusive movements of the mandible for trituration.

Grinding in Mouth Cannot Produce Physiologic Occlusion

I have registered and transferred to the articulator a sufficient number of such cases to justify the statement that no amount of grinding in the mouth, no matter how carefully done, will result in physiologic occlusion—not even by placing grinding material between the upper and lower finished dentures. This is so for the following reasons:

1. In order to obtain the planes to balance the case correctly, it is important that during the process of grinding, the mandible must not move in lateral position or in protrusion more than 3 mm. or half the second molar tooth from buccal to lingual (which is im-

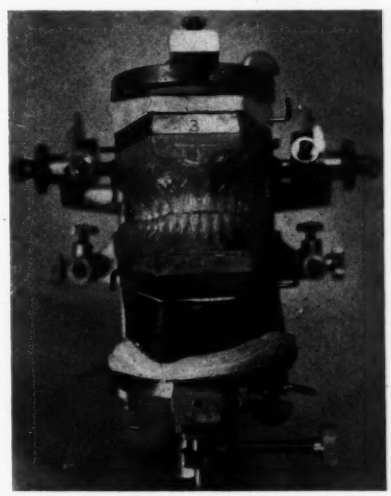


Fig. 4—Acrylic dentures seen in Fig. 4 in centric occlusion when placed in the mouth without grinding to the angles obtained from patient, or grinding without registration of the condylar path.

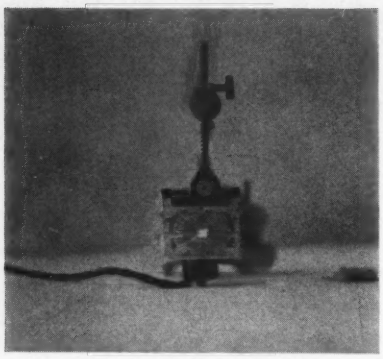


Fig. 5—Anterior view of screen attached to upper finished dentures; the light to the lower is ready to be placed in the mouth for detecting malocclusion in dentures not ground to angles obtained from patient.

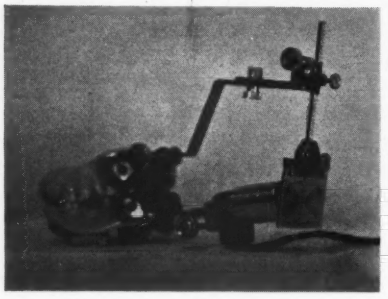


Fig. 6—Lateral view of light attached to lower; the screen attached to upper.

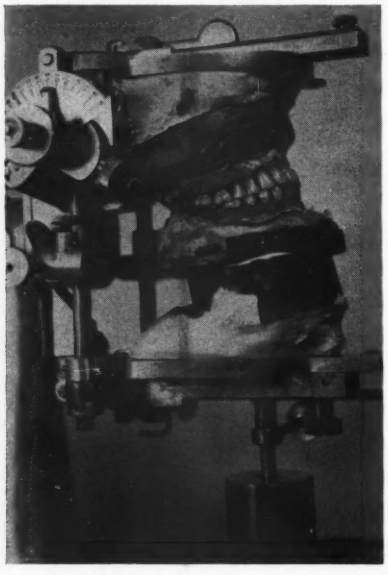


Fig. 7—Vulcanized dentures in centric occlusion after grinding.

possible to control in the mouth). Only by doing so can we obtain the planes necessary for the curve of Spee and physiologic occlusion.

2. Because of tissue resilience and the presence of saliva which washes away most of the grinding material from certain areas, it cannot be certain where grinding is done or when to discontinue it. It is a hit and miss process and it is also uncertain whether we are grinding to the proper curve of Spee for any particular case.

3. Unless one is extremely careful, grinding dentures in the mouth results in closing the vertical relation; the more grinding that is done, the more closure that results.

Relation of Curve of Spee to Physiologic Occlusion

The curve of Spee in artificial dentures is the result of (1) a precise registration of the condylar paths; (2) an accurate transfer to the articulator; (3) a correct setting of the sagittal condyle path degree plates to the readings obtained from the patient, and (4) the moving of the incisive pin vertically in line with the center bearing point,[2] and with pressure downward on a horizontal surface during the process of grinding. The artificial condyles move downward to whatever degree they are set, whereas the anterior component moves upward, cutting the planes and curve of Spee in the porcelain teeth.

When dentures, such as are shown in Figs. 7, 8, and 9 are finished and placed in the mouth, physiologic occlusion is had, so that during the process of mastication when the bolus of food is introduced into the mouth and the elevator muscles contract to crush the food, the elevator muscles remain in a state of contraction. There is then an alternate contraction of the right or left external pterygoid muscles to move the mandible in lateral position for trituration. The lower teeth move over the upper in harmony with temporomandibular articulation and in harmony with the elevator muscles when these are contracted. If, however, the dentures lack the curve of Spee and physiologic occlusion and the elevator muscles contract to crush the bolus of food, and the right or left external pterygoid muscles contract to move the mandible in lateral position—then, the mandible must move downward, and it does so against the powerfully contracted elevator muscles. This force is so great that instead of the lower teeth moving in harmony over the upper teeth, the dentures move over the supporting tissue, thus creating irritation of both the hard and soft tissues.

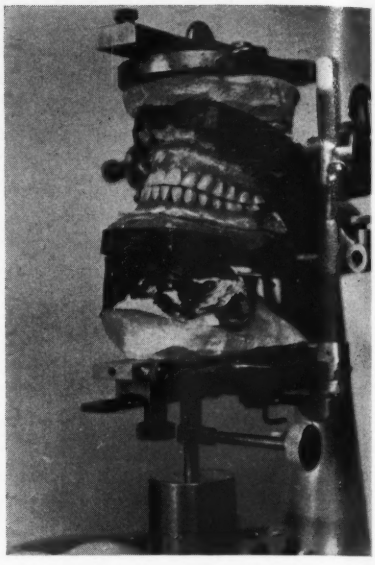


Fig. 8—Same dentures on working side.

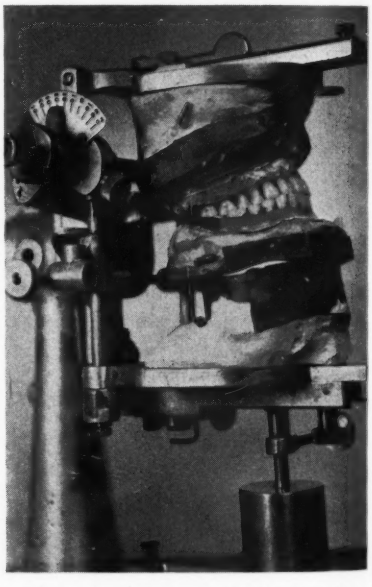


Fig. 9—Same dentures on balancing side.

105 *West State Street.*

[2]Miller, I. S. and Miller, J. S.: Traumatic Occlusion in Natural and Artificial Dentures, DENTAL DIGEST, 47:115 (March) 1941.

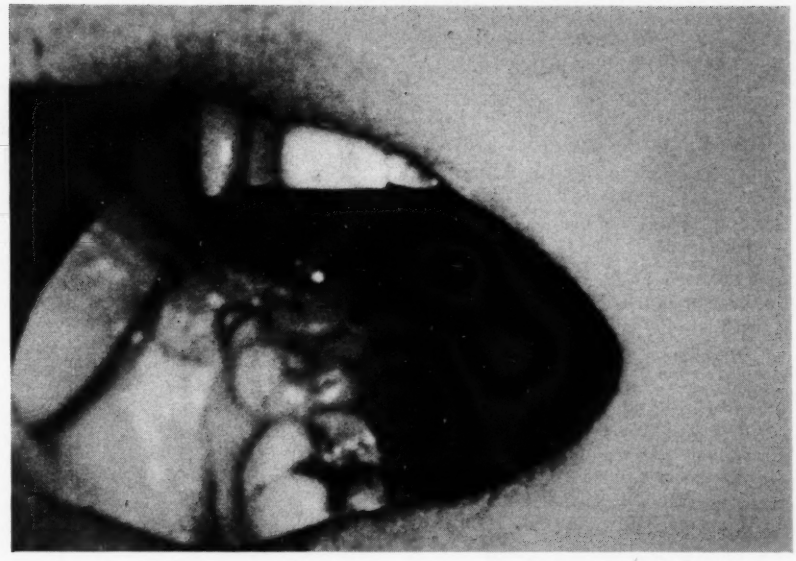
Electrosurgery in Dentistry

WILLIAM I. OGUS, D.D.S., Washington, D. C.

ELECTROSURGERY is the art of separating tissues by an electric current. Electrosurgery was developed in the operating room to assist general surgery in a better approach to the precancerous and cancerous tissue tumors.

Doctor William Clark of Philadelphia spent many years in accumulating data on previous investigations in this field. He substantiated this accumulated knowledge with practical clinical application and laboratory proof, and he must be considered the father of electrosurgery in America. His fine work attracted the attention of two outstanding surgeons, Doctors Howard Kelly and Grant Ward of Johns Hopkins University, whose wide clinical experience in hundreds of cases treated by this new method is recorded in their joint book on electrosurgery, published in 1932.

It was my privilege to observe the first work of Kelly and Ward, and to attempt the application of electrosurgery to dentistry. The equipment used then was too powerful, however, for application to the delicate tissue of the mouth. With the collaboration of Doctor Elmer Brown of Trenton, New Jersey, and in conjunction with outstanding engineers in diathermy, a machine was constructed with controlled power, to produce a half millimeter affective cutting (microscopic measurement). This led to my development of techniques of electrosurgery for the following: (1) exposing the third molar; (2) operating on hypertrophied tissues; (3) sterilizing root canals by desiccation; (4) elimination of the pyorrheal pocket; (5) the surgical preparation of the mouth for denture construction with the aid of the electric knife.



Figs. 1, 2, 3, and 4—Exposure of third molar by removal of overhanging pericoronal flap: Fig. 1: Appearance of case before operation. Fig. 2: Beginning of incision and outline of tissue removal with electric needle electrode. Fig. 3: Appearance of case following removal of overlying flap. Fig. 4: Appearance of case four weeks later. This tooth was in normal alignment and will serve a useful purpose.

Advantages

1. Cutting, coagulating, and sterilizing at the same time, the electric knife controls hemorrhage, minimizes infection, and prevents regrowth.

2. Electrosurgery is far superior to scalpel surgery because of its rapidity of action and healing.

3. It is safer, because of its control of infection and toxemia, and elimination of most postoperative complications.

Caution

This approach is a definite technique which must be developed by careful steps: the practice on meat, the use in minor cases to begin with, and thor-

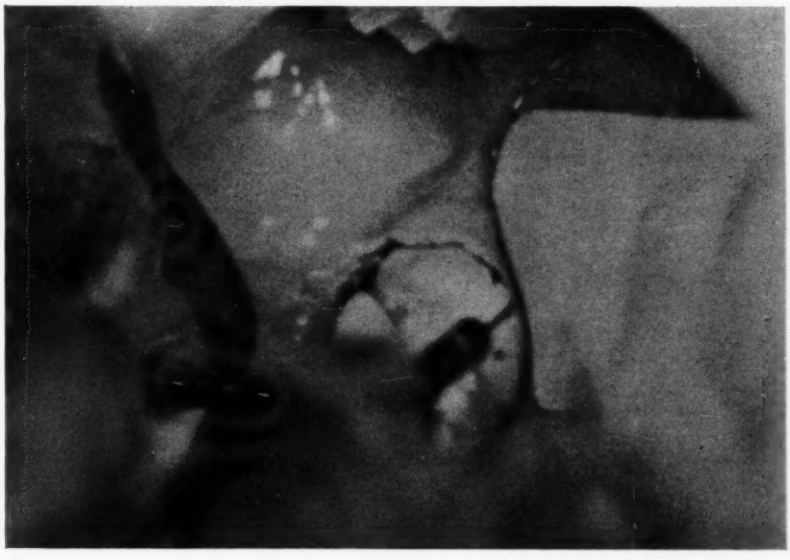


Fig. 2

1. What is electrosurgery?

Answer: The art of separating tissues by an electric current. The application of high frequency electric currents for the destruction and removal of diseased tissue or for the cutting through of normal tissue with diminished bleeding.

2. How old is the principle of diathermy cutting?

Answer: More than 100 years.

3. What are the three currents used in electrosurgery?

Answer: Acusection (cutting), coagulation, desiccation.

4. What is acusection?

Answer: High frequency currents, creating a molecular disintegration of the tissues. Lymphatics and capillaries are sealed as they are cut.

5. What is electrocoagulation?

Answer: The act of changing the tissue proteins into a homogeneous material. The tissues first boil in their own fluids and the surrounding lymph, quickly forming a white coagulum.

6. What is electrodesiccation?

Answer: The dehydration of living tissues by a moderate heat induced by the passage of a uniterminal high frequency current through the tissue.

7. What current is most prevalently used in dental operations?

Answer: A combined or blended current of cutting and coagulation.

8. What currents are used in electrosurgery?

Answer: Monopolar and bipolar.

9. What electrodes are employed?

Answer: Monoterminal and biterminal.

10. What is meant by bipolar?

Answer: One pole is the electrode.
One pole is the patient, in contact with a pad, who creates an electrical field. This is monoterminal.

11. What else is bipolar?

Answer: A system of coagulation, wherein both prongs are placed in one instrument (both poles), creating coagulation only between the prongs—a low voltage application. Patient is not an electrical field. This is biterminal.

12. What is monopolar?

Answer: The application of one pole instrument. The patient is not an electrical field. Creates desiccation.

13. What impacted teeth are best suited for exposing?

Answer: Those teeth that are in normal alignment, and are tissue impactions; those impacted teeth in an edentulous area where their eruption would make them useful in denture and bridge retention.

14. When is desiccation used in dentistry?

Answer: For root canal sterilization and leukoplakia.

15. Why is desiccation used in root canal sterilization?

Answer: Because desiccation current is the only current that creates a dry, toughened surface, and this is the only means of drying a root canal by electrosurgery.

16. Why is the current of desiccation used in root canal therapy?

Answer: Desiccation is the only current leaving a bone-dry surface, and it is necessary to dry the canal before filling.

17. Where is electrosurgery indicated in the surgical preparation of the mouth?

Answer: In changing the tissue and muscle attachments in order to obtain a higher periphery; in changing the attachments of the frenum; in the removal of loose flabby tissue; in the removal of hypertrophied tissues; and in exposing more of the mandible and maxilla.

18. What are the advantages of this procedure?

Answer: Bloodless; prevents regrowth; prevents infection.

19. Does the application of electrosurgery prevent immediate placement of a denture?

Answer: No.

20. What are the dangers in the use of the electric knife?

Answer: Accidents due to faulty retraction. Heavy cutting too close to bone may cause osteomyelitis of the part.

21. When is it indicated to preserve the lower third molar while it is attempting to erupt?

Answer: When the tooth is in normal alignment, and the impaction is of tissue involvement.

22. What are the histologic observations in relation to regrowth of the pericemental fibers?

Answer: They never reattach, once detached.

23. What consideration is given as to the amount or depth of pockets in recommending surgery for pyorrhea, or extraction?

Answer: None. The success or failure of this surgery depends on the conditions of the osseous structure of the alveolus, rather than the depth of pockets.

24. What techniques are available by the electrosurgery method for pyorrheal pocket elimination?

Answer: Scalpel surgery followed by curettage and coagulation. Uniterminal (needle) electrosurgical application, bone curettage, followed by coagulation.

25. How is hemorrhage controlled in deep cutting by electrosurgery?

Answer: By grasping the tissue involved, or vessel, with a hemostat, and passing the current through the hemostat for coagulation; or by direct application of a ball electrode to the part of coagulation.

26. What is the length of time of healing after electrosurgery as reported by general surgeons?

Answer: From two to four weeks.

27. What is the length of time of healing that should be expected following elimination of pyorrheal pockets?

Answer: From two to three weeks.

28. How do the pathologic observations after electrosurgery compare with the observations after scalpel surgery?

Answer: When they are both successful, the time limit is reduced to less than half.

29. What instruments are essential to be used in electrosurgical elimination of pyorrheal pockets?

Answer: An electrode, file, and scalpel.

30. Are packs necessary following pyorrheal surgery?

Answer: No. Packs are used to control hemorrhage, to soothe the newly exposed cementum. In electrosurgery a sealed, sterile blood clot is obtained, and the dentine can be desensitized by use of biterminal coagulation applied to the tooth.

31. How is root canal sterilization obtained?

Answer: Insertion of a broach, used as an electrode, with desiccation current. Drying the canal and removal of débris. Culture of canal débris; when clear, fill canal by any accepted method.

32. How can sterilization of a root canal be proved?

Answer: By culture report following the sealing of a sterile cotton point or other dressing.

33. Is general anesthesia indicated in electrosurgery?

Answer: No.

34. In the use of local anesthesia for electrosurgery, what injections are sufficient?

Answer: Conduction anesthesia for the lower; local injection for the upper.

35. Can electrosurgery be performed without the use of an anesthetic?

Answer: Limited only to the biterminal current, a current for light coagulation. Desiccation of root canals can be accomplished without anesthesia.

ough instruction. The use of a machine immediately after purchase and a few hours' instruction by a technician will bring unnecessary failure.

Currents

The three principal currents employed in electrosurgery are: (1) acusection (cutting); (2) electrocoagulation; (3) electrodesiccation.

1. *Acusection* — Acusection (cutting) currents are of extremely high frequency, create a molecular disintegration of the tissues, and seal lymphatics and capillaries as they cut. The incrustation which characterizes the edges of the incisions made with a cautery knife does not take place with the use of the electrosurgical cutting current.

2. *Electrocoagulation*—Electrocoagulation is the act of changing the tissue proteins into a homogeneous material. A dry stage is not seen until the treatment is prolonged; the tissues first boil in their own fluids and the surrounding lymph quickly forms a white coagulum.

3. *Electrodesiccation*—Electrodesiccation is the dehydration of living tissues by a moderate heat induced by the passage of a uniterminal high frequency current through the tissue. As the water evaporates from the cells, the tissues assume a blanched, arid appearance, and small warts, moles, corns, and other skin blemishes are brushed off in a white dry flake of powder; a considerably toughened dry white surface is left.

Fig. 3

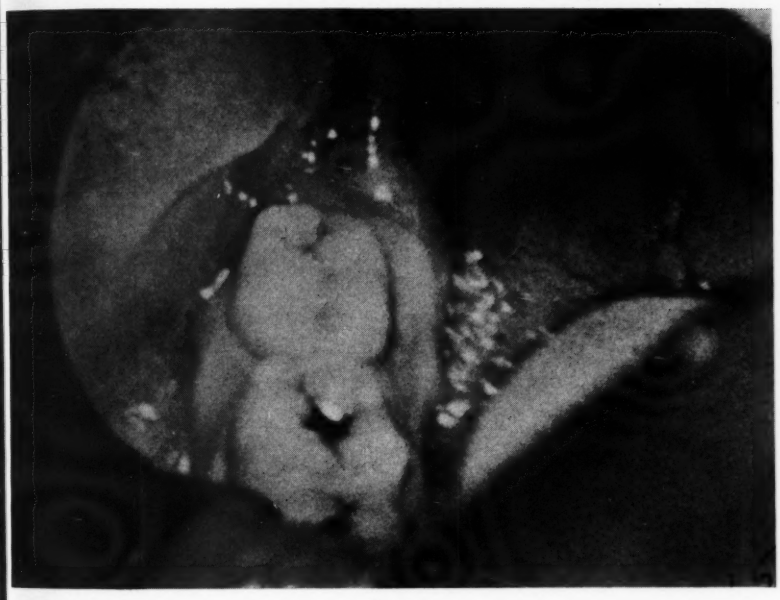


Fig. 4

The principal current used in most operative cases of dental origin is a blended cutting-coagulating current, with 0.1 mm. penetration. This is a bipolar current. The thickness of tissue to be cut, the amount of tissue to be removed, is an important factor in determining the current desired. Surgical judgment is of the utmost importance.

The desiccation current is employed chiefly for dental use in root canal sterilization, and in leukoplakia. This is a monopolar current.

Exposing and Saving the Lower Third Molar

In measuring more than 1800 mandibles, mandibles from prehistoric time

Figs. 5, 6, and 7—Extensive hypertrophy on upper ridge. Ridge is entirely covered by this tissue. Cause: ill-fitting denture, worn for more than ten years. Fig. 5: Appearance before treatment. Fig. 6: One-half removed by electric knife, immediately following operation. Bloodless surgery, complete healing in two weeks. Fig. 7: Right side, removal by scalpel, hemorrhage finally controlled by coagulation. Infection and treatment followed. Complete healing in eleven weeks.

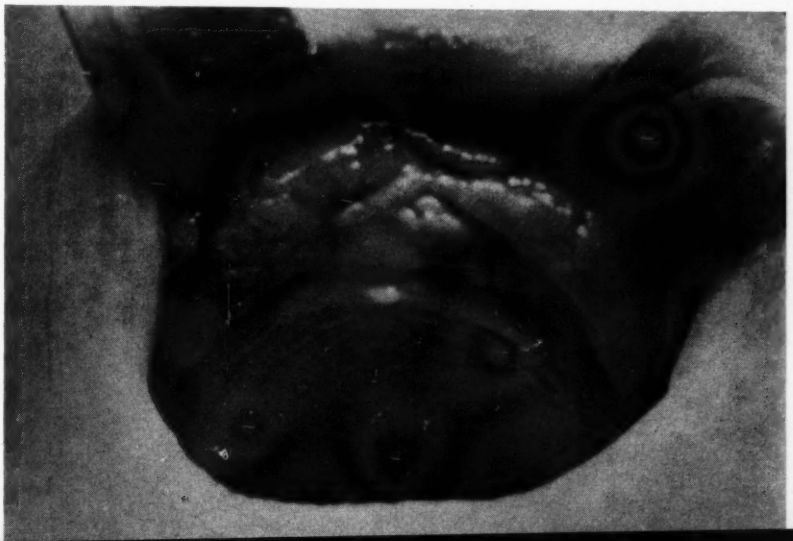


Fig. 6

ward and forward to the neck of the tooth. It must be borne in mind that there is no attachment of tissue to the enamel of any tooth; therefore, the tooth must be exposed to the enamel-dentine junction.

The third molar stabilizes normal occlusion and maintains contact of teeth by anterior pressure. If the second molar is lost, it can frequently be used as an abutment. With the third and second molar lost, changes in the temporomandibular joint may occur.

to the present, I found that the third molar is not a useless tooth, that in the normal case there is sufficient room for the eruption of a third molar. The problem in many cases has been tissue, not bone. By the approach with an electric knife, which cuts, coagulates, and sterilizes, it is now possible to proceed with safety and remove the overlying tissue and pericoronal flap, allowing the tooth to erupt normally. This, to be sure, applies to teeth in normal alignment, where the predominating difficulty is tissue. I do not wish to infer that with this procedure such third molars will never need to be removed; but the incidence will be much less.

In order to get satisfactory results the exposure must be made so as to incise one-half inch posterior to the distal cusp of the third molar, proceed down-

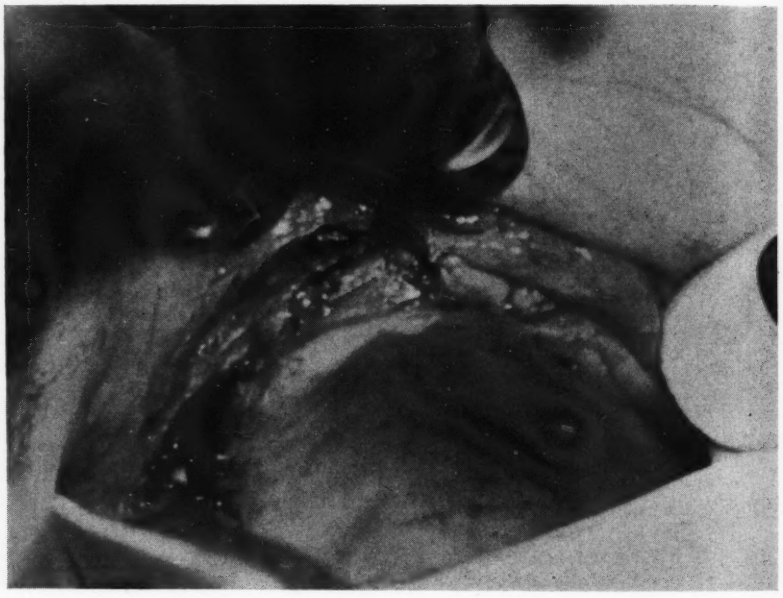


Fig. 7

Fig. 8, 9, 10, 11—Removal of frenum in preparing case for orthodontia. Note extension of muscle on lingual. Fig. 8: Appearance of case prior to operation. Fig. 9: Grasping of frenum by hemostat and applying electrode to hemostat, sloughing off muscle to height desired. Fig. 10: Destruction of muscle interproximally and lingually. Fig. 11: Appearance of case one month later.

Muscle and Tissue Attachments: Excision of Hyperplastic Tissue by Electrosurgery

In operating on the soft tissue of the mouth by scalpel surgery, we may be confronted with (1) hemorrhage, (2) infection, (3) regrowth and reattachment. By substituting an electric knife, hemorrhage can be controlled; infection minimized, and regrowth entirely prevented.

Some of the abnormalities encountered in the edentulous or partly edentulous mouth are (1) low frenum; (2) low tissue and muscle attachment, wide or thin; (3) enlarged and hypertrophied tuberosities; (4) hypertrophied gingival tissue, usually the result of long

irritation; and (5) tissue and muscle attachments on resorbed alveolar ridges. These abnormalities can be more easily corrected by the electrosurgical approach than by scalpel surgery. No packs are required to hold tissue from reattachment. Healing takes place more readily. Less postoperative pain and fewer complications are produced. A higher periphery for better seal for a denture is had, and displacement of a denture by movement of muscles of expression is prevented.

Elimination of Pyorrheal Pocket

There have been two schools of thought regarding the elimination of the pyorrheal pocket. One is classed as the conservative school, and the second, the surgical. Both schools have demonstrated good results by their methods, but unless both schools will soon join, using the useful elements found in each method, a third school of thought will rise to combine the two procedures.

Few mouths require a complete gingivectomy. In most cases there are a few isolated pockets. If those pockets can be eliminated satisfactorily by conservative means, well and good, but when surgery is required, the approach by substituting the electric knife for the scalpel has proved satisfactory.

Healing is far more rapid than by any other approach. Packs are entirely discarded, as a sealed, sterile blood clot is obtained. The instrumentation is confined to an electrode and a file, because it is necessary only to smooth the floor of the pocket and loosen all débris. Coagulation which follows sloughs out any débris that may be left.

Sterilizing the Root Canals by Desiccation

In 1906 Hermann Prinz stated: "There is but one efficient method of sterilizing root canals. Remove the teeth and boil them!" Today it is possible to sterilize root canals by boiling them without extraction of the teeth. By the insertion of a broach used as an electrode in the root canal of the teeth, sufficient heat is generated to kill any germ that may be present not only within the root canal itself but also beyond the apex of the tooth.

This is the original thought of M. K.

Fig. 9

Fig. 10

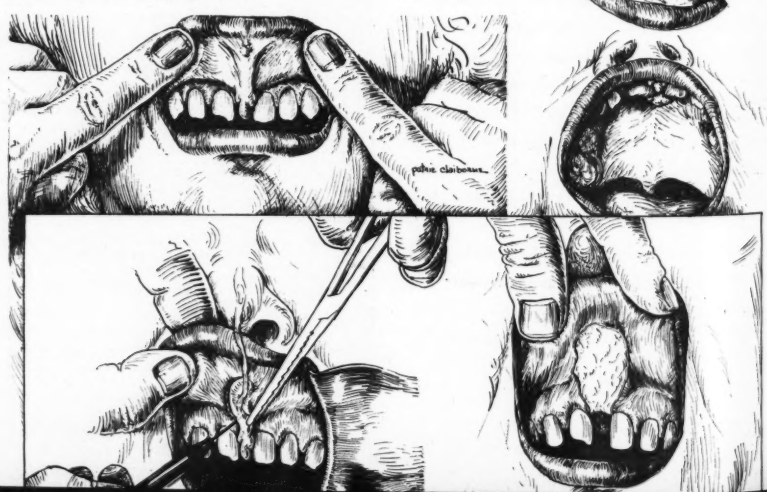
Fig. 11

Fig. 12

Fig. 13

Fig. 12—Models of re-prepared lower arch. Thin knife-edge ridge removed, which had been sensitive to pressure and patient could not wear denture. Before and after. Fig. 13—Removal of enlarged tissue tuberosities, touching lower arch and preventing denture insertion because of lack of space.

Fig. 14—Removal of frenum: Upper left and top right: Appearance of case before operation; center right: lingual view. Lower left: Grasping of muscle with hemostat and applying of electrode. Bottom right: Appearance immediately following operation.



Baklor, with whom I have had occasion to collaborate. It is my opinion that if the root canal problem will ever be solved, it will be by electrosurgery. This contention is substantiated by 1500 cases; by clear culture reports following sterilization and drying of the canal; by roentgenologic evidence. Teeth treated by electrosurgery have recovered from acute root canal involvement and have served for many years as isolated teeth, as abutments for bridgework, as abutments for support of removable dentures.

Comments

1. The practical application of electrosurgery to general surgery has been fully established.

(*Continued on page* 419)

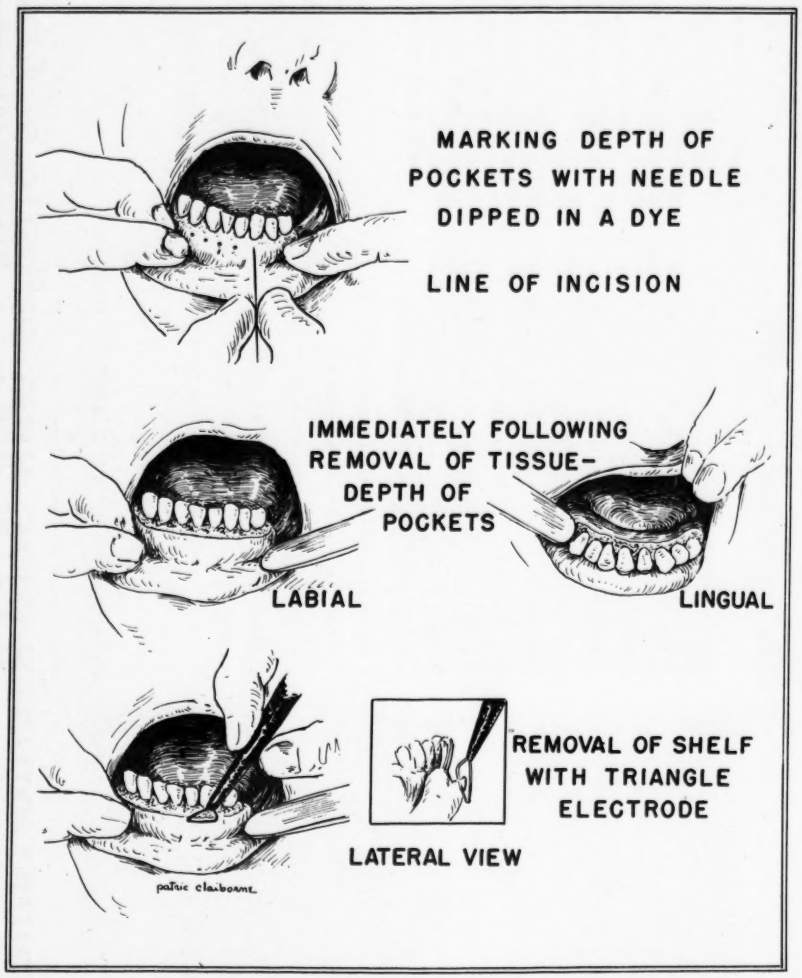


Fig. 15—Removal of pyorrhea pocket.

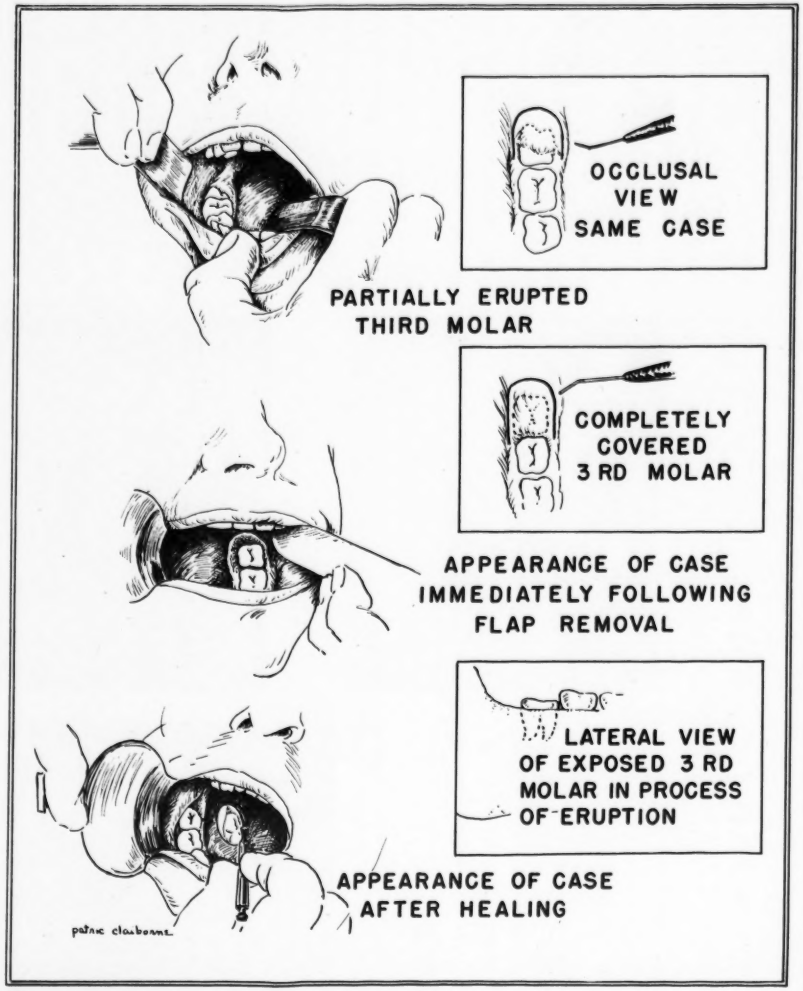


Fig. 16—Exposing third molar.

Acrylic Bridges with Gold Reenforcement

IRVING E. LABY, D.D.S., Beverly Hills, California

DIGEST

A method is described for the construction of acrylic bridges in which added retention and increased resistance to the pulverizing of cement are accomplished by processing the acrylic over a gold "skeleton," comprised of a gold coping and an extension bar for reenforcement. The technique is applicable to large restorations if the bridge is constructed in three sections as explained here.

THE PROBLEM OF cementation has not been entirely solved. Acrylic resin as a plastic has a tendency to give under impaction, thereby pulverizing the cementing medium beneath it. I have endeavored to overcome this in the manner herewith described.

Bridgework Attachment

Bridgework is best constructed with gold reenforcement.

Let us assume that a lower anterior bridge is to be constructed from cuspid to cuspid (Fig. 2):

1. A jacket preparation is made in the conventional manner.

2. In order to prevent a bulky abutment crown a second shoulder is prepared on the incisal third of the tooth. The preparation should have a shoulder at the gingival and a shoulder two-thirds up or on the incisal third (Figs. 2 and 4).

3. A gold casting is made to cover the incisal third to and even with the edge of that shoulder (Fig. 4). This casting will have an extension bar to the opposite cuspid prepared in the same manner.

4. When the acrylic is processed over this gold skeleton, the gold coping within the incisal third of the acrylic crown will give added retention to the acrylic crown. Added retention will also be had from the increased resistance to the pulverizing of the cement by the stress exerted on the bridge during mastication. This type of bridge will not loosen.

The esthetic improvements are seen in the before and after pictures, Figs. 1 and 5.

Three-Section Construction of Bridge

In order that large acrylic restorations, such as one extending from the molar on the right clear around to the molar on the left, may be handled and processed, it is necessary to construct the bridge in three sections (Fig. 6).

As will be noted in Fig. 7, there are two molar abutments, two cuspids and a central.

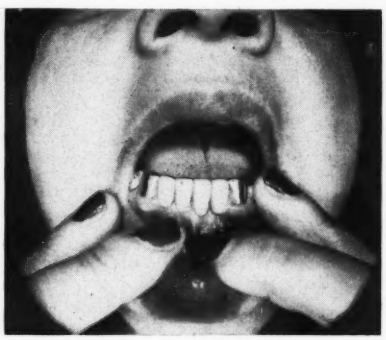


Fig. 1—Appearance before construction of acrylic bridge.

Fig. 2—Shoulder preparations.

1. The abutment preparation on the cuspids, central and right molar were prepared as for jackets.

2. An inlay abutment preparation was made on the left molar.

3. Gold thimble castings with extensions were constructed and these are shown removed in Fig. 7 and in place in Fig. 8. The extension bars on the pontics act to strengthen, reenforce, and bind the bridge.

4. The copings are put to place on the model and the bridge is waxed, carved from cuspid to cuspid, tin-foiled, processed (Fig. 9), and when finished,

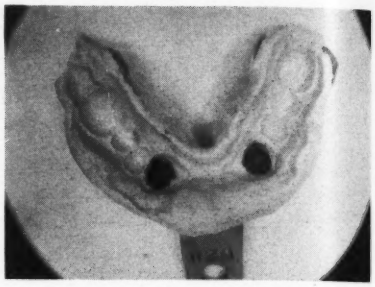


Fig. 3—Preparation of gold castings.

Fig. 4—Gold castings and extension bar on model.

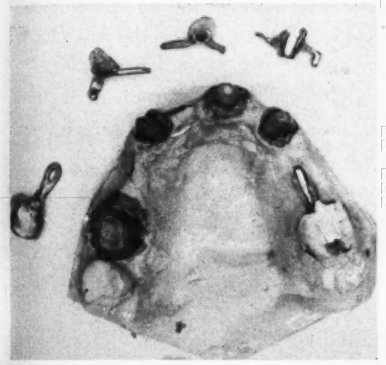
Fig. 5—Appearance after insertion of acrylic denture.

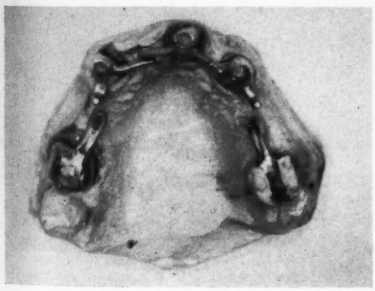
placed back on the model as in Fig. 10.

5. It will be noted in Fig. 10 that on the distal of the cuspids there is an L-shaped bar which is to receive a coping to be processed into the lateral bridge, thus forming a tubular attachment. The L-shaped male portion fits into the tubular piece which is processed within the bicuspid of the posterior bridge.

Both left and right bridges are similarly constructed. The necessity for making this bridge in three sections is obvious, but the primary reason is to facilitate processing and fitting in the mouth.

Fig. 6—Appearance before construction of large anterior acrylic bridge.





Figs. 7 and 8—Gold thimble castings and extensions removed and in place on model.

Fig. 9—Copings in place on model, bridge waxed, carved, tin-foiled and processed.

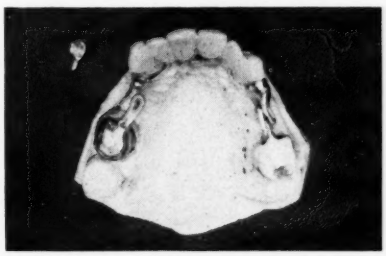


Fig. 10—Bridge in place on model. Note L-shaped bar at distal of cuspids which is to receive coping to be processed into lateral bridge, forming tubular attachment. L-shaped male portion fits into tubular piece which is processed within the bicuspid of the posterior bridge.

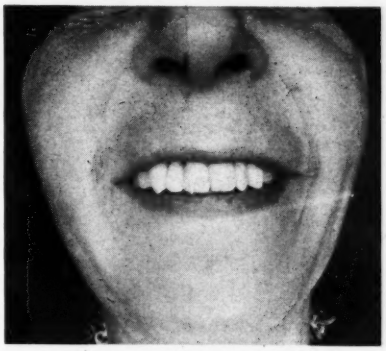


Fig. 11—Appearance after insertion of bridge.

6. The anterior section is first cemented to place, then the right and left posterior sections are cemented.

The esthetic results can be noted by comparing before and after pictures (Figs. 6 and 11).

Suggestion

In the processing, if one does not wish to use tin foil an excellent method is to make a thin mix of kryptex and zinc phosphate cement, half and half, painting this on the lingual and ridge portion of the wax pattern; in other words, the part that is to be buried in the stone plaster mold. When the case has been processed, and wet cellophane has been used over the labial before closing the flask, there will be little finishing and polishing to do. When the bridge is removed from the flask, it can be immersed overnight in a 50 per cent diluted solution of hydrochloric acid and water, thereby cleaning the bridge of cement and plaster.

9615 *Brighton Way.*

Electrosurgery In Dentistry

(*Continued from page* 416)

2. Postoperative results of pathologic conditions have proved the advantages of this new system of surgery.

3. Cutting, coagulating, sterilizing, elimination of infection and quick disappearance of the toxemia after eradication of any tumor—these make electrosurgery a safe procedure in medicine and dentistry.

4. General surgeons have reported new growths of tissue and healing in from seven to ten days following major surgery. The clearing up of dental infections in pyorrhea, and the removal of soft tissue tumors in from one to three weeks is possible with electrosurgery.

5. Desiccation in root canal sterilization is the only solution for the troublesome root canal problem.

6. Electrosurgery is an adjunct to good dentistry. The electric knife will in time become standard equipment in every modern dental office.

1832 *Eye Street, N. W.*

Large Salivary Calculus in Submaxillary Gland

HERMAN MEYERS, D.D.S., Pittsburgh

DIGEST

A case is reported of an unusually large salivary calculus which was not detected until swelling appeared as a result of pressure of dentures and a damming up of saliva. The enlarging mass caused the tissue of the floor of the mouth to rupture spontaneously in five places.

Report of Case

History—A man, aged 50, presented with a swelling on the right side of the neck below the posterior portion and angle of the mandible. Dentures had been inserted four days previously after an edentulous period of one and one-half years. On the second day following the insertion of dentures, the patient noticed some swelling which gradually increased in size until the fourth day when the dentures were removed and the patient was referred to me.

Clinical Examination—Extra-orally, the right side of the face appeared to extend straight down to the supraclavicular region. On palpation the swelling appeared slightly indurated, and on greater pressure, a large hard mass could be detected.

Intra-orally, the vestibule appeared to be normal. Five small slits, however, were visible lingual to the mandible in the floor of the mouth. The slits were 2 mm. or 3 mm. long in a line midway between the mandible and the median line and extended posteriorly from the bicuspid region. Retraction of the tongue to the left caused the slits to open and a dirty-gray substance was seen through the openings. The tissue between the openings, which were about 4 mm. apart, was so thin and transparent that an instrument placed in one opening and carried under the tissue and out of the next opening was plainly seen. Palpation with fingers and instruments revealed the presence of an unusually hard mass in the floor of the mouth. This mass did not elevate the floor of the mouth.

Roentgenographic Examination — Extra-oral roentgenograms revealed the presence of a large radiopaque substance. Occlusal roentgenograms revealed a similar mass lingual to the mandible.

Diagnosis—The diagnosis was salivary calculus in the right submaxillary gland.

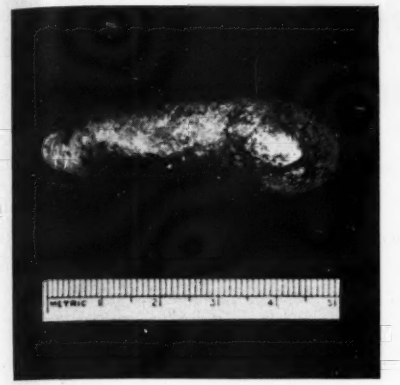
Swelling: It was believed that pressure of the lingual flange of the denture on the calculus caused a damming up of saliva.

Openings or Slits in the Floor of the Mouth: Progressive enlargement of the calculous mass caused a thinning of the tissue forming the floor of the mouth, and this resulted in the spontaneous rupture of the tissue in the five places noted.

Operative Procedure—1. Under novocain anesthesia, small incisions were

Fig. 1—Roentgenogram taken before large salivary calculus was removed.

Fig. 2—After removal of salivary calculus.



Figs. 3 and 4—Two views of mass specimen.

made uniting the slits in the floor of the mouth. There was no hemorrhage when this was done.

2. Extra-oral pressure caused the anterior portion of the calculus to project through the enlarged opening. The mass was easily removed by grasping the exposed portion with a large hemostat.

3. The cavity was irrigated with a normal saline solution.

Careful examination failed to reveal any evidence of smaller stones or pus. The lining of the cavity appeared to be epithelialized and was similar in character to the tissue covering the floor of the mouth.

Calculus Specimen—A large triangular mass, approximately 5 cm. anteroposteriorly, 3 cm. in height, and 1.5 cm. at the thickest point, weighed 1 ounce. It was dirty-gray in color, with several areas having a definite reddish cast, indicating the incorporation of blood. The mass appeared rough, but was covered with a thick gelatinous-like substance which made it smooth and slippery.

Postoperative Examination—Immediate postoperative roentgenograms failed to reveal the presence of any radiopaque substances. Twenty-four hours after the removal of the calculus, the swelling had entirely disappeared. There was no pain, and irrigating solution was returned clear. There was no recurrence of swelling when the denture was again inserted, and the mouth was normal on subsequent examinations.

Fig. 4

6115 *Jenkins Arcade.*

Substitute for Tin Foil*

[Research Commission of the American Dental Association, J.A.D.A., Midmonthly Issue, July 15, 1942.]

A SUBSTITUTE for tin foil has been developed which is satisfactory for use in curing dental resins.

A film of a soluble alginate is applied to the plaster. The film, after it has dried, is made insoluble and thus protects the resin during curing or molding. Two solutions are required.

Solutions

First Solution—The first solution is prepared by dissolving 5 Gm. or 6 Gm. of a soluble alginate, such as potassium, sodium, magnesium or ammonium alginate in 80 milliliters of water. This may require several hours of constant stirring. When the solution is complete, 20 milliliters of glycerine is added. The first solution can be applied by dipping, spraying or painting. After the film has dried, a second solution is applied.

Second Solution—The second solution contains metallic ions which will convert the soluble film to an insoluble film. A saturated solution of calcium chloride is satisfactory.

Procedure

1. The halves of the flask, after the wax has been boiled out, are dipped in the first solution and allowed to drain and dry for a few minutes. A second dipping may be necessary if the solution is too thin or if the plaster does not retain a sufficient amount of the solution to form a continuous film.

2. The halves are next dipped in the chloride solution and left for five or ten minutes and then removed and dried. (The film can be removed from teeth with a sharp needle-hook instrument similar to an explorer.)

3. The flask is now ready for trial packing and, with a moderate amount of care, will retain the film until the cure is completed in boiling water.

Advantages

The substitute has advantages over the foil in that (1) it is easier to apply, (2) it takes less time at the bench, (3) it gives a smoother surface, and (4) it makes easier the separation of the halves of the flask.

*A patent application has been filed with proper assignments to the Secretary of Commerce to protect the Government and the dental profession. The invention was perfected by Irl C. Schoonover and George R. Dixon of the dental research staff at the National Bureau of Standards.

A Simple Method for Making Acrylic Inlays, Jacket Crowns or Bridges

SAMUEL M. ROBBINS, D.D.S., Cleveland

ACRYLICS UNDER sustained pressure give a denser material, free from bubbles, harder in tensile strength than by other methods of processing.

DIGEST

An instrument is illustrated and described for making acrylic restorations under an injection and compression method in one operation.

An alternative method is offered in a split-mold flask construction of inlays, crowns, and bridges.

Appliance Used in Making Acrylic Restorations

The instrument shown in Fig. 1 is a simplified appliance used in making acrylic restorations under an injection and compression method in one operation. The concavity in the base of the tube is so made that spruing can be done as close as possible to the wax pattern, eliminating a long layer of acrylic, which is harder to drive in the plaster mold. Plaster cannot take the force applied as steel molds can which are used in commercial processing. Plaster molds will give or crack under pressure. The tube acts both as sprue former and injection chamber. The threaded driver is the injector and compressor (Fig. 2). The long sprue pin makes it easy to handle the pattern, and easy to remove when heated (Fig. 3).

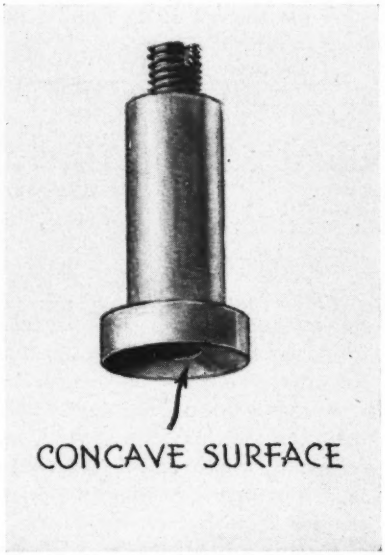


Fig. 1—Simplified appliance for making acrylic restorations under an injection and compression method in one operation. Concavity in base of tube makes it possible for spruing to be close to wax pattern.

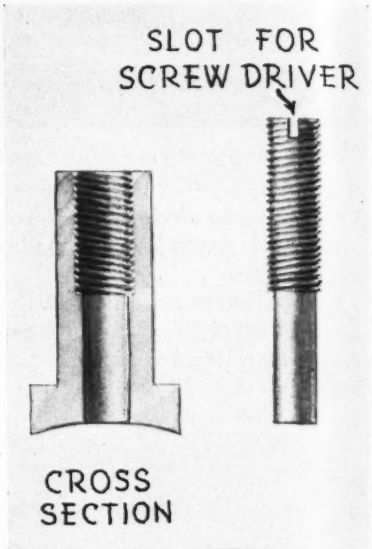


Fig. 2—Tube which acts both as sprue former and injection chamber. Threaded driver is the injector and compressor.

Investing; Spruing; Preparing the Pattern

Investing—Investing the pattern is simple (Fig. 4). The method is the same as the double investment technique for gold inlays. Stone can be used instead of plaster for the second investment, or a mixture of both, if additional strength of investment is desired. The tapered ring facilitates easy removal. The outer investment can be partly sawed through, then cracked with a heavy plaster knife to expose the painted pattern intact.

Spruing—The pattern is sprued with a sprue pin of sufficient size, from 14 gauge to 5 gauge or one-sixteenth inch to one-eighth inch, in accordance with the size of the pattern. An old straight handpiece bur or wire nail of the same diameter can be used. If the pattern is small, use a 14 gauge piece of stainless wire. Fig. 3 shows how the pattern is sprued and waxed in the tube.

Painting—Mix some artificial stone or die stone on a slab, then proceed to paint on as in the double investment inlay technique; add dry powder to absorb excess moisture and allow to set.

Plaster Setting—Apply vaseline to the inlay ring; fill with plaster; moisten the painted pattern and set into plaster up to the top of the tube, leaving the hole exposed, so that the driver can be placed in position to drive acrylic without getting plaster down in the tube. The finished painted pattern is seen in Fig. 4. Invest the pattern in the tapered inlay ring, using stone or plaster or a mixture of half stone and half plaster (Fig. 4).

Acrylic Technique

1. When the initial set of the plaster has taken place, put ring and pattern in cold water to dissipate the heat of crystallization of the plaster. After the final set has taken place, set in a pan of water and heat to the boiling point. Remove the sprue pin from the tube. With a dropper or a syringe filled with boiling water proceed to wash or flush out wax through the sprue hole in the mold.

2. Flush out the remaining wax with carbon tetrachloride a few times while still hot; use solution to fill the pores in the investment which also gives the mold a glazed surface. Flush this

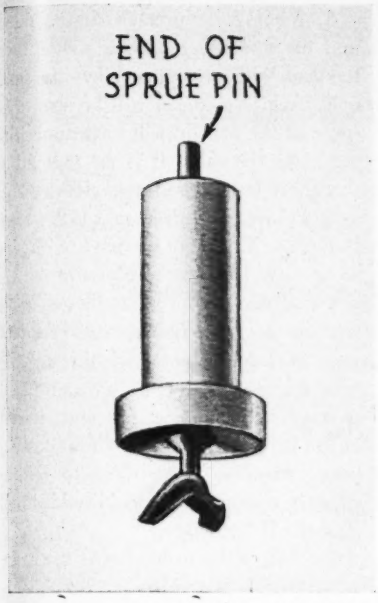


Fig. 3—Long sprue pin which makes it easy to handle pattern, and easy to remove when heated. Pattern is sprued and waxed in the tube.

solution down in the mold a few times, blow out excess, and allow to cool, so that the ring can be handled.

3. Mix acrylic according to the manufacturer's instructions and when it has reached the consistency of adhesiveness, place small quantities in ball-like shapes into the bottom of the tube. (Do not allow acrylic to get to the resistant stage as it will be more difficult to drive into the mold. Keep the acrylic sealed in a small covered jar, which prevents evaporation of the monomer or liquid, thereby keeping the acrylic in a plastic state.) It will not go through the small opening of the tube without extreme pressure, thereby causing the upper part of the mold to crack. The principal thing is to get the mold filled completely and the tube filled up to the threads. The compression of the material will take place when the threads of the driver begin to grip.

4. Screw the driver down with light pressure. Remove and add material if necessary before compression is instituted. See that the tube of the driver is always three-fourths filled. Allow to stand for a few minutes, then use a screw driver with a handle about three fourths of an inch to an inch in diameter. With a force of a maximum 10 pounds of pressure, proceed to turn the screw. When resistance is met, allow to stand again for a few minutes and proceed to turn as before. If the driver is almost completely down, remove and add material again. Give it as many turns as it will take with the same pressure as previously. Add material again if necessary. The operator does not have to hurry as the acrylic will not begin to polymerize for a few hours, unless it is placed in hot water.

5. Place in a pan of water at 70° F. Carry the temperature up to 100° F. within a half hour. During this time remove the case to see whether more compression can be made while the temperature is rising. A compound heater which has thermostatic control is a useful instrument to control curing time. Carry the temperature from 100° F. to 158° F., repeating the same procedure for another half hour. Then place in a double boiler and carry to 180° F. for one hour. During that time remove a few times to see whether compression is complete, being careful not to exert over 10 pounds' pressure. The internal pressure of this mold will be about 1000 pounds which is more than sufficient for compression.

6. Remove the ring from the double boiler and allow to stand for ten minutes in the air; then place in cold water. When chilled, knock the mold out of the ring and separate carefully.

7. To remove particles of investment

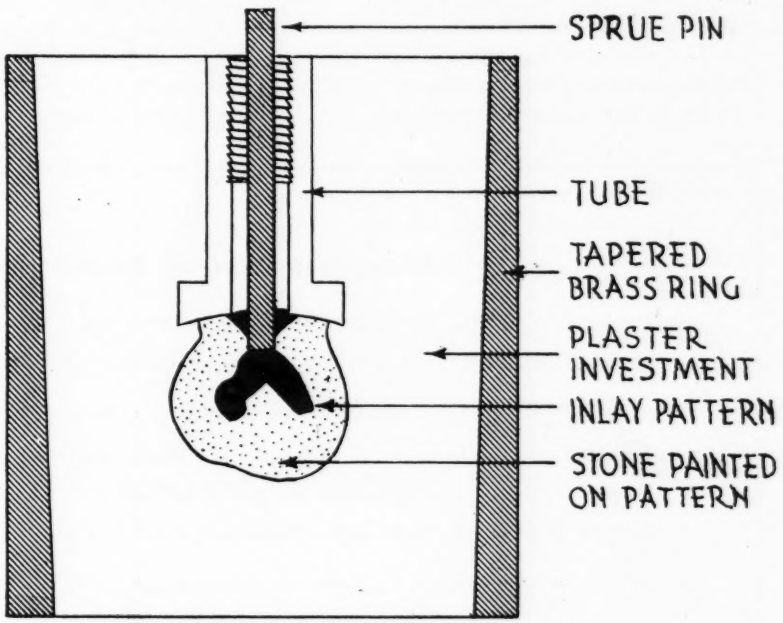


Fig. 4—Finished, painted pattern in tapered inlay ring.

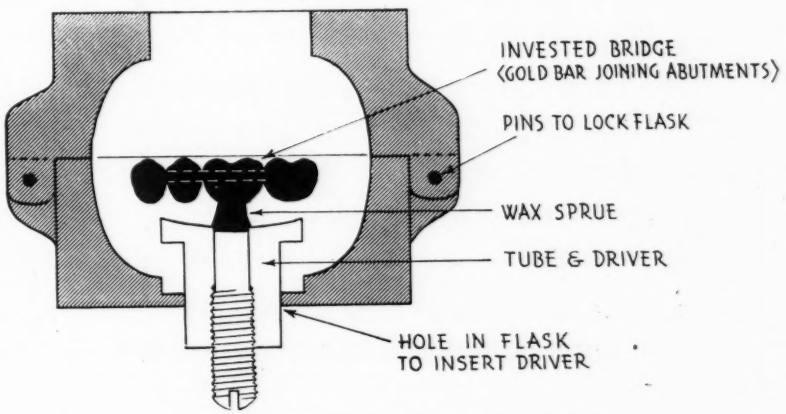


Fig. 5—Position of invested case in split-mold flask.

adhering to acrylic, place in a solution of hydrofluoric acid for an hour, neutralize in sodium bicarbonate and wash.

8. Polish on die or in the mouth.

Remember to water-soak the acrylic before setting in place, so that it has its maximum content of water absorption and will not rob the cementing medium of its water content thereby weakening the cement.

Comments

1. Any type of direct or indirect inlay can be made in this manner if properly sprued.

2. Jacket crowns can be made in this manner or by the split-mold method with the driver properly placed, so that compression will be on the basic color.

3. This technique does not require special apparatus or large clamps.

4. Cavity preparation should be the same as for porcelain inlays and jacket crowns.

5. The operator should learn to judge how much material is required in the tube to drive in the mold and have sufficient for compression.

6. There are three sizes of drivers and tubes, but two are sufficient: the smallest for inlay work and jacket crowns, the third largest for bridgework.

Split-Mold Construction of Inlays, Crowns and Bridges

A wespro split-mold flask is made especially for jacket crowns and bridgework. The position of the invested case is shown in Fig. 5.

1. Partly unscrew the driver so that acrylic will be forced down into the compression chamber before pressing the basic acrylic in place.

2. Make the shading as usual.

3. When fully pressed in the mold and the final trial pack is made, lock the flask with steel pins. When the final trial pack is made, it will be seen that some of the acrylic will have found its way into the tube. It is an indication that there is sufficient material present.

4. Before compression of the case is begun, it is best to drive with not more than 10 pounds' pressure with a screw driver having a handle not more than an inch in diameter. Proceed to press the basic color acrylic through the tube with the driver. Remove and add as much material as can be compressed in the bridge. Allow a few minutes between turns of the driver to secure enough compression. Add additional material if necessary.

For inlays the technique is the same as previously stated.

1284 *East 105th Street.*

Announcement of Books Received

TRAUMATIC SURGERY OF THE JAWS, Including First-Aid Treatment (282 Illustrations), By Kurt H. Thoma, D.M.D., St. Louis, The C. V. Mosby Company, 1942.

MANUAL OF STANDARD PRACTICE OF PLASTIC AND MAXILLOFACIAL SURGERY (Illustrated), Prepared and Edited by the Subcommittee on Plastic and Maxillofacial Surgery of the Committee on Surgery of the Division of Medical Sciences of the National Research Council, and Representatives of the Medical Department, U. S. Army. Philadelphia and London, W. B. Saunders Company, 1942.

SYNOPSIS OF PATHOLOGY (with 294 Text Illustrations and 17 Color Plates), By W. A. D. Anderson, M.A., M.D., St. Louis, The C. V. Mosby Company, 1942.

A MANUAL FOR THE DIFFERENTIAL DIAGNOSIS OF ORAL LESIONS (with 174 Text Illustrations and 1 Color Plate), By Major Joseph L. Bernier (D.C.), St. Louis, The C. V. Mosby Company, 1942.

THE NATIONAL FORMULARY (Seventh Edition), Prepared by the Committee on National Formulary by Authority of The American Pharmaceutical Association. Official from November 1, 1942. Washington, D. C., The American Pharmaceutical Association, 1942.

STATE OF ILLINOIS DEPARTMENT OF PUBLIC HEALTH 24th ANNUAL REPORT, July 1, 1940 to June 30, 1941. Issued by Department of Public Health, Springfield, Illinois.

THE CARE OF THE AGED (GERIATRICS), Fourth Edition, Thoroughly Revised (50 illustrations) By Malford W. Thewlis, M.D., St. Louis, The C. V. Mosby Company, 1942.

The Editor's Page

DISORDERS ASSOCIATED with the erupting deciduous teeth represent a universal ailment of infants, often alarming to apprehensive mothers. The fretting of infants during the process of teething is sometimes used as a convenient mask for lazy diagnosis of more serious maladies. Between the poles of those who ascribe all infant disorders to teething and those super-modern pediatricians who discount any relationship between the eruption of the teeth and systemic disturbances there are a few persons who have carefully investigated the subject.

A Brooklyn pediatrician, Joseph Schwartzman,[1] has made a five-year study of the derangements accompanying the erupting deciduous dentition. He finds that about 26 per cent of the infants seen in private practice who are under 30 months of age have some form of dental disturbance. Girl infants seem to suffer more. Most of the symptoms and the worse ones occur during the eruption of the first teeth, the lower and upper central incisors. The five most common symptoms are rhinitis, fever, anorexia, vomiting, and cough. Convulsions are infrequent. Irritability was common and was a variable, ranging from excessive finger-sucking to spells of crying and actual insomnia. Tonsillitis, diarrhea, otitis media, and constipation, skin eruption, drooling and laryngitis, grinding of the mouth, pain in the abdomen, polyuria, drowsiness, cervical adenitis, gingivitis with ulceration, buccal cacosmia, thirst for water, and perspiration—these disorders in the order of decreasing frequency and in varying combinations contributed to the symptom complex. Frequently the physical manifestations are prodromal in character and the child is ill generally before there is any sign of redness in the soft tissues of the mouth and before the eruption of the teeth.

Schwartzman has found that the phenomena attending teething are seasonal in nature. In winter infants suffer most with symptoms diminishing in spring, summer and fall. This might suggest that Petersen's[2] theory of meteorologic association between health and the weather applies in this condition as well in many others.

Another characteristic noted was that the mechanism of symptom recurrence with each dental disturbance followed an individual pattern—the same symptoms recurring in each child and resisting all therapy and then automatically disappearing as eruption of the teeth was accomplished.

There appears to be no connection between the nutritional status and the teething syndrome; in other words, the disturbances of teething are not associated with malnutrition or avitaminosis; but are apparently "connected with the structural development of the tooth and jaw, the proper adjustment of the body's defense organs, and the child's increased sensitivity to trauma plus the reflex reaction from the site to other parts of the body."

Schwartzman is of the opinion that an infant needs time to make the proper adjustment to his surroundings, that the comparatively minor trauma set up by the eruptive phenomenon of teething disturbs the fine nervous mechanism which is not yet in balance. When the infant grows older and the nervous mechanism is completely developed and in balance, such reflex disturbances are unimportant.

There is no prophylactic regimen known. Some children escape dentitional disturbances entirely; others suffer painfully. The only treatment is the use of sedation to decrease the reflex reactions and nervous irritabilities.

Every dentist, every physician, every parent should be warned not to explain all infantile maladies on the basis of disturbances of dentition. This diagnosis should be made only after careful examination and case study; nor are these disturbances, just because they are almost inevitable, to be treated too casually. The child who is suffering from rhinitis, fever, anorexia, and cough is a sick infant, and should be treated by all modern medical methods known to give relief.

[1]Schwartzman, Joseph: Derangements of Deciduous Dentition, Arch. Pediatrics, 59:188 (March) 1942.

[2]Petersen, W. F.: Weather, Dental Extraction, and Bacterial Localization, DENTAL DIGEST, 47:264 (June) 1941. Petersen, W. F. and Milliken, M. E.: The Patient and the Weather, 1, part 2: Autonomic Integration, Ann Arbor, Michigan, Edwards Brothers, 1936.

Placing and Holding Intra-Oral X-Ray Films

W. WARD TRACY, D.D.S., New York City

DIGEST

A rapid procedure is suggested for placing and holding intra-oral x-ray films with minimum discomfort to the patient.

THE FOLLOWING IS a rapid and accurate procedure for placing and holding x-ray films:

The film is placed in the wooden bite block, the bite portion of which should measure one-half inch to allow room to remove the finger (Figs. 1 and 2). While retracting with the left hand, place the block and film in position with the thumb and index finger of the right hand, and hold in position while the jaw is being closed. The thickness of the bite block is enough to allow removal of the finger (Figs. 3, 4, 5, and 6).

Hints on Placing Film

Posterior—1. Bend the upper posterior corner of the film for the upper molar region to conform to the arch of the palate.

2. For the lower bicuspid region, bend the lower anterior corner, so that the film will not dig into the anterior tissues.

3. For the upper and lower left posteriors, place the block and film with the right and left index fingers.

4. For all others, place the block with the thumb and index finger of the right hand.

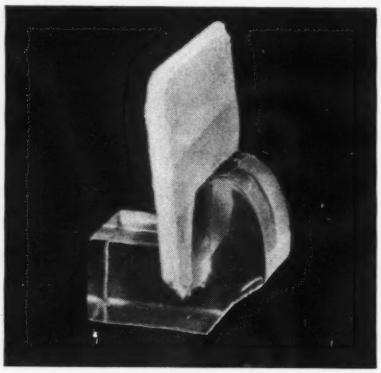


Fig. 2—Home-made clear acrylic resin bite block.

5. It is important in the lower posterior areas to thread the film between the tongue and teeth.

6. It is not necessary to force the film all the way down; let the patient help by instructing him to "close gently." This voluntary act seems to relax the muscles of the tongue and floor of the mouth.

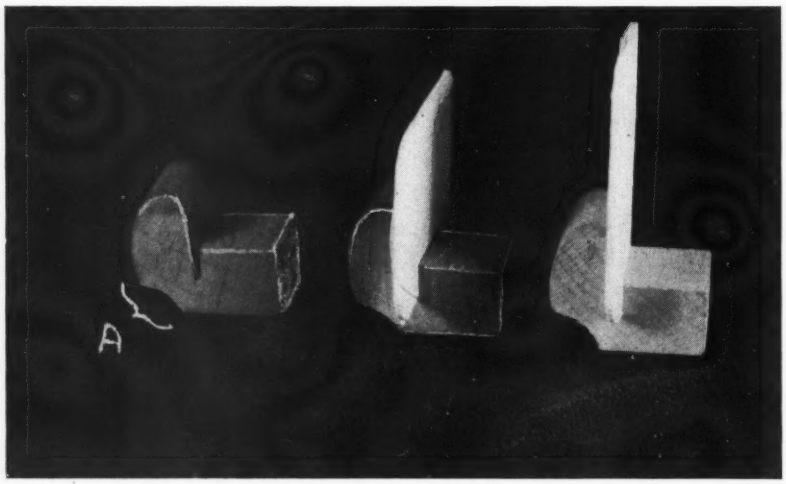


Fig. 1—Left, Wooden bite block. Cut edge at A flat or concave to facilitate holding block in anterior region. Middle, Film placed sideways for posteriors. Right, Film placed vertically for anteriors.

Fig. 3A

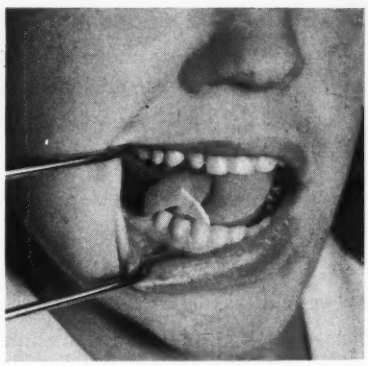


Fig. 3B

Figs. 3, 4, 5, and 6—Block in position in skull and in mouth of patient. Thickness of bite block is enough to allow removal of finger.

Anterior—1. To facilitate placing the film in the anterior region, grasp the block between the thumb and index finger far enough back to bend the film vertically.

2. For the uppers, rotate the hand down to bring the biting edge (A) in Fig. 1 into place, so that the lower anteriors articulate against this area.

3. For the lower anteriors, use the index finger of the left hand to press the film anteriorly into place.

Prevention of Gagging—To mini-

Fig. 4A

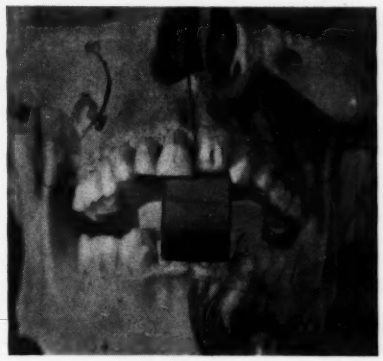


Fig. 5A

Fig. 6A

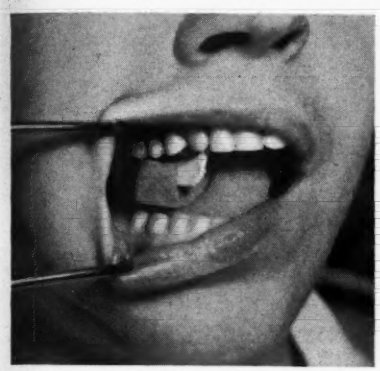


Fig. 4B

Fig. 5B

Fig. 6B

mize gagging when taking upper posterior roentgenograms, have the patient gargle with cold water. Do not slide the film back against the palate but carry it back, keeping it free of the palate until in position; then place it boldly against the tissues and hold it firmly until the patient has closed on the bite block. It is not the pressure on the soft palate but the movement of the film that seems to cause gagging.

Comment

The wooden bite block is far superior to the old method wherein the patient holds the film. With a little practice, a series of fourteen pictures may be taken by this method in five minutes and with a minimum of discomfort to the patient.

9 *Rockefeller Plaza.*

WAR BOND AWARDS!

The DENTAL DIGEST is continuing the offer of a $100 UNITED STATES WAR SAVINGS BOND twice each year, in January and July, to the author of the best article published in this magazine in the preceding six issues. The "best" article is selected by a vote of the readers of this magazine. Ballots to cast your votes will be provided again in December. In the meantime, check your favorite articles.

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During the current season of hay fever and early fall colds, many patients suffering from nasal congestion will undoubtedly come into your office.

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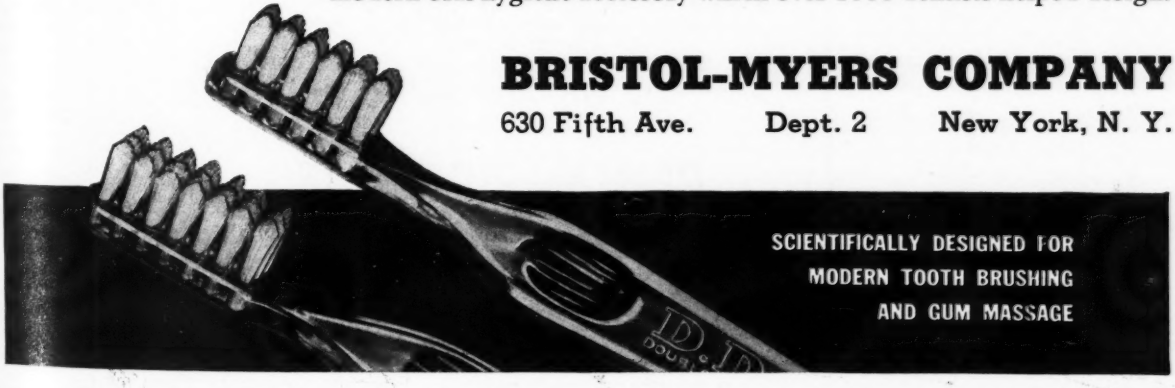

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The complete edition of *Visual Education in Dentistry* comprises 30 charts, most of which are printed in full color. The charts are invaluable in your patient-education program; ideal for use at the chair; effective material for your reception room table. If you have never had a copy, or if your present copy is badly worn, you are entitled to the complete edition at the special subscriber price of $1.00. *The coupon below is for your convenience.* $2.00 per copy to non-subscribers unless purchased with a subscription.

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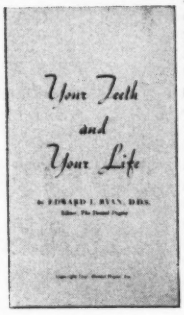
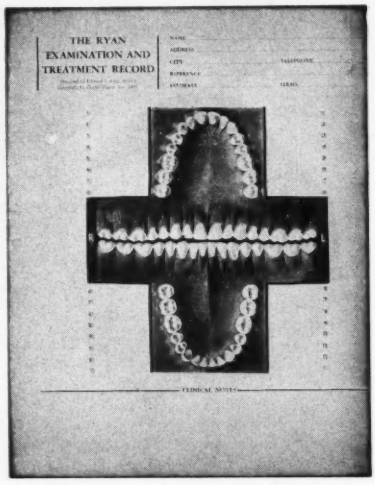
The new booklet, *Your Teeth and Your Life*, illustrated here, is intended primarily for patient distribution. It is written entirely in lay language. Charts tell the essential story. Many dentists are using it (1) as a monthly statement enclosure; (2) in the reception room; (3) as an enclosure with patient recall cards, etc. Prices, 25 for $1.00; 100, $3.00. *The coupon below is for your convenience.*





The Ryan Examination and Treatment Record Chart is extensively used throughout the profession—also in many institutions where essential records are required. The chart is often referred to as the most practical one ever offered. Aside from offering a permanent record of cases the charts have been found to have a definite informative value in explaining conditions to patients. Price, $1.00 per pad of 50 charts. Standard 8½ x 11 size. *The coupon below is for your convenience.*

20 *Reasons for Dental X-Rays* is a four-page pamphlet of common cases revealed only by the x-ray. It is available now because of a great demand for this material by dentists everywhere. It is a worthy addition to the other visual material referred to on this page. Prices, 100, $6.50; 200, $10.00. *The coupon below is for your convenience.*

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Each of the items listed on this page is strictly ethical, and worthy of consideration for use in your patient-education program. Build now for the future by outlining a definite educational program. Carry the program out month after month. Show your patients that neglect costs more than treatment, in pain, in time, and in money. TO HELP CONVINCE THEM, SHOW THEM. Patient-education material is an economical means of doing this.

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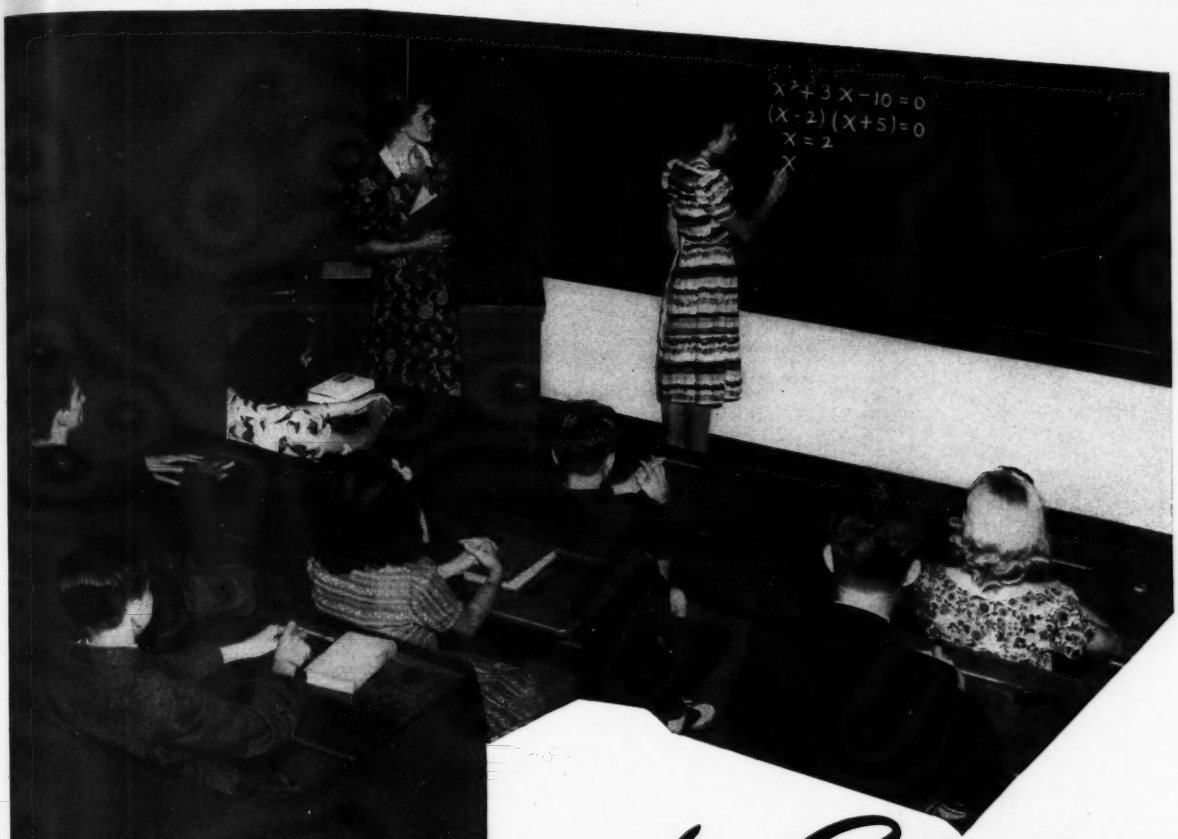

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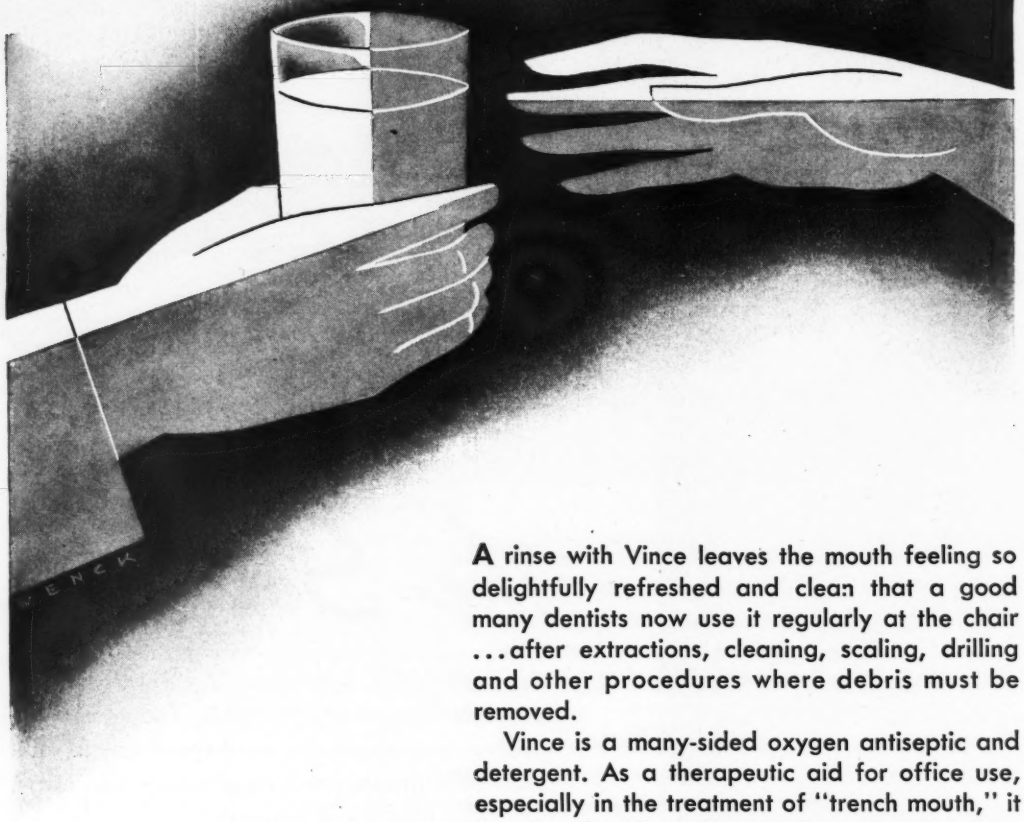

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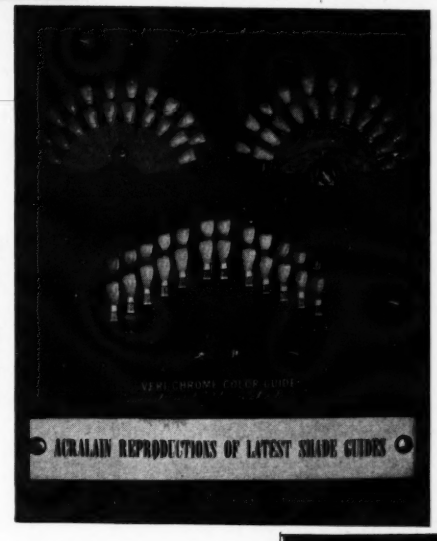

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Contra-Angles

Required Reading for Those Under 45 . . .

This magazine has wearied its readers by repeatedly emphasizing the opportunity that dentists have who are under the military age of 45 to prepare themselves to serve as auxiliary medical officers. We have been agitating for dental societies to prepare civilian dentists for their possible rôle as auxiliary medical officers. Now harken to these words of Brigadier General Robert H. Mills, chief of the Dental Corps of the United States Army:

"The dental officer in the campaign zone must assume wider obligations a large part of the time and must act as an auxiliary medical officer to further the primary mission of the Medical Department."

Then General Mills read a dental report to the House of Delegates of the American Dental Association. This report was recently received from a task force engaged in action in a combat area. This is what the report said:

"Major A. J., Dental Corps, Acting Surgeon, Provisional Field Artillery Brigade; Major G. P. T., Division Dental Surgeon and Officer in Charge of Records; Captain F. V. W., Dental Corps, Additional Duty as Admission and Evacuation Officer; Captain J. J. H., Dental Corps, Additional Duty as Mess Officer; Captain G. P. F., Dental Corps, Additional Duty as Regimental Surgeon; Captain H. A. M., X Infantry, Acting Surgeon Second Battalion, Killed in Action; Captain D. J. R., Additional Duty as Assistant Regimental Surgeon."

We are still quoting from General Mills:

"At least one of these boys acting as a battalion surgeon gave his life while participating in the evacuation of the

THE LONELINESS OF PAIN

The first human cry in the wilderness was to summon help for the relief of pain. Today, the first mission of medicine is still to ease the acute discomfort of pain.

In the service of pain-relief, Peralga gives unusual satisfaction. Combining the pain-relieving properties of acetophenetedin and acetylsalicylic acid with the sedative action of barbital, Peralga not only mitigates promptly the suffering from headache, migraine, neuralgia, dysmenorrhea, earache and other painful conditions, but also quiets the attendant nervous symptoms without causing incapacitating drowsiness.

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wounded in the jungle. None of them came out of that campaign. It is desirable that the dental officer assume these duties; otherwise there would be no need for them to be officers. The Army could hire dentists on a contract basis if their duties were to be entirely limited to professional procedures."

To prepare dentists who are now in civilian practice and may be called to Service, The Chicago Dental Society has taken the lead in announcing a four-day intensive Institute of War Medicine and Surgery for Dentists, to be held October 26, 27, 28, and 29, 1942, in the John B. Murphy Memorial Hall of the American College of Surgeons, in Chicago. This course will cover the following subjects: traumatic surgery and treatment of burns, tropical medicine, military sanitation, aviation medicine, military psychiatry, nutrition in wartime, prosthetic services in war, and oral surgery in war; also, the organization of the medical departments of the Army and Navy and lectures on military customs and courtesies and on the recruitment of medical department officers.

This Institute of War Medicine and Surgery for Dentists will be open to all members of the American Dental Association; $20.00 covers the Registration and Tuition Fee which should be made payable to The Chicago Dental Society, 30 North Michigan Avenue, Chicago.

The following military officers will act as advisers to the directing committee of The Chicago Dental Society: Colonel Arnett Matthews, Chief Dental Officer of the Sixth Service Command; Captain J. A. Tartre, Senior Dental Officer of the Ninth Naval District; Major Kenneth Cofield, Liaison Officer between the Office of the Surgeon General and the American Dental Association; Commander Fred F. Molt, Dental Corps, United States Navy.

Because of the seating capacity of the lecture hall, attendance is limited to 700. One hundred reservations have already been made for Army and Navy officers; therefore, dentists who are interested in attending this Institute should register *at once*.

Deferment for Cause

Lieutenant Colonel Sam Seeley of the Office of Procurement and Assignment

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Oral Hygiene

tells the story of a chap who appeared before the Selective Service Board asking for a deferment on the basis of his wife's pregnancy. One of the Board members, an old-timer in the Navy commented: "If you were present at the laying of the keel, you don't have to be on hand for the launching of the ship."

Candor in the House . . .

If you have never developed the habit of reading the personal notice columns in the newspapers, you have been missing a lot of pathos and sometimes humor, particularly in the country newspapers. Here is one that appeared recently in a small town paper:

> WANTED: TO KEEP HOUSE for a square shooter, a man who won't fire a good cook and housekeeper because she won't marry or have an affair; pleasant; capable; refined; references.

Luckie . . .

You have to be lucky to live to be 93. You have to be a stalwart man to be able to attend a dental convention at 93. That is exactly what S. Blair Luckie of Chester, Pennsylvania did. Doctor Luckie, one of the Nestors of Dentistry, attended every session of the House of Delegates, the dinner for President Oliver, and had a mighty good time at all the social functions. When you look at a man 93 years old, smoking a black cigar, joining in the community sing at dinner, self-ambulatory, without the aid of a cane, still practicing dentistry—you are, indeed, looking at a real man. Doctor Luckie was a little disappointed that there was no dancing after the St. Louis dinner to President Oren Oliver—not that he expected to dance himself, so he said with some regret, but he did like to sit by and watch the dancers.

Task Force in St. Louis

I was taken to task by two heavy forces—one from the American College of Dentists and one from the International College of Dentists. The boys resented some of the things I said about their Colleges in this column last month. They seemed to miss the point. I conceded, as I have many times, that both Colleges were conceived in goodness of

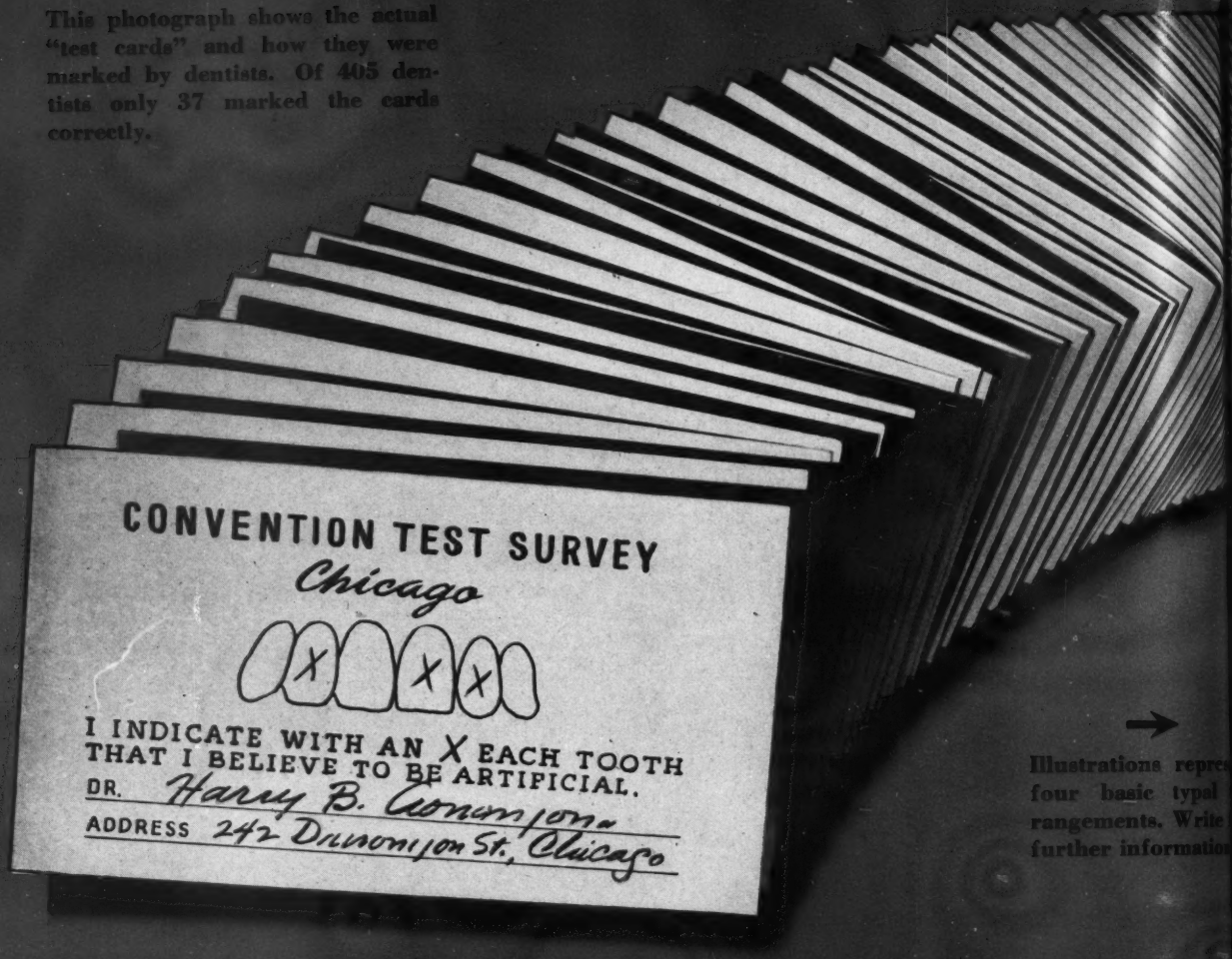
(*Continued on page* 443)

STUMPING THE EXPERTS

at CHICAGO

Read how 91.6 could not identify True-Blend

This photograph shows the actual "test cards" and how they were marked by dentists. Of 405 dentists only 37 marked the cards correctly.



Illustrations repre
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HERE IS MORE DRAMATIC PROOF

At Chicago Convention in visual test Dentists again prove True-Blend Anteriors defy detection. Here is the way this revealing test was conducted at Chicago.

91.6% failed to check the correct teeth. The patient was seated under a brilliant light and dentist after dentist examined his teeth at a distance of *only two feet.* The dentists were asked to indicate which of the anteriors were artificial by checking a test card shown above. 405 dentists took part in the Chicago test and only 37 picked the teeth correctly! What could be better proof that True-Blend teeth, skillfully selected, defy detection?

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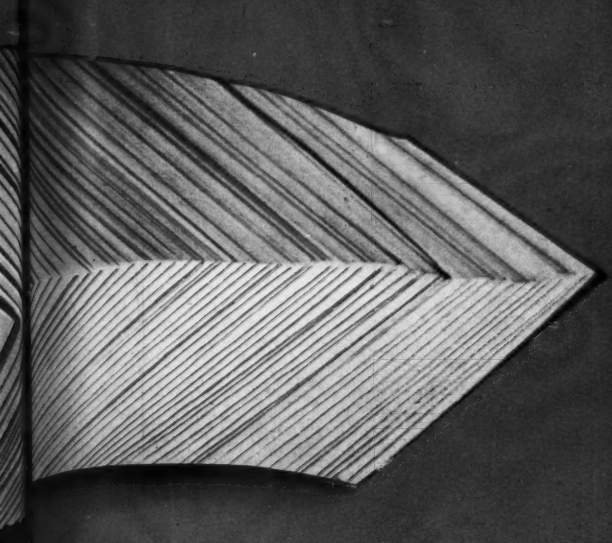
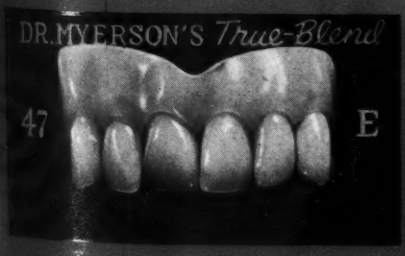




4 BASIC TYPAL ARRANGEMENTS

HOW DO THESE FACTS AFFECT *Your* PRACTICE?

Everyone fears the possibility of needing artificial teeth yet many of your patients sooner or later will require partial or complete dentures. If you offer them a denture made from teeth that cannot be detected their fear is automatically removed. Think what this can mean to your practice in good will and to your patients in self-confidence and satisfaction!

Before True-Blend teeth were presented to the profession, the subtle variations in natural teeth . . . the striations . . . the variance in color . . . the beautiful nuances . . . differences in light absorption were not available in artificial teeth. TRUE-BLEND possesses all these characteristics, plus natural forms in anatomically correct sizes and colorings for *all* ages and both sexes.

More important to the dentist than the years of research which have resulted in TRUE-BLEND teeth is the *actual experience* of dentists and their patients who use these outstanding teeth.

For example:

CHICAGO:

"The thing that has impressed me most about the new presentation is how natural the teeth look. It was hard to believe that they were not living teeth."

FROM AN ARTICLE:

" . . . Dr. Myerson's True-Blend Anterior Teeth. This tooth is the most life-like product that I have ever seen. Dr. Myerson deserves a great deal of credit for his efforts."

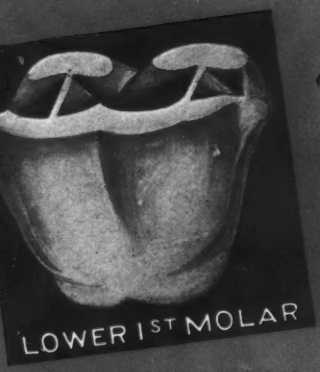
CANADA:

"Dear Dr. Myerson:

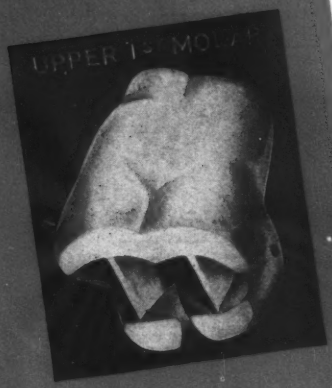
There are three of us in this office and we have all given your teeth a very fair trial and find that they are all you claim for them. Recently we took 250 feet of colored motion pictures and the young lady looked beautiful with her new True-Blend teeth."

There's only one True-Blend Ask for it by name!

This is Ideal Tooth's
TWENTY FIFTH ANNIVERSARY
. . . A Milestone in the
continuous process of Research
and Development dedicated to making life more agreeable for the millions who must depend on artificial teeth.



..and TRUE-KUSP POSTERIORS are made to blend perfectly with TRUE-BLEND ANTERIORS



Dentures with these non-locking true functional posteriors and True-Blend anteriors give your patients greater satisfaction and increase your practice

Give your patients something to be happy about, something to tell their friends about. Make full dentures with Dr. Myerson's True-Kusp Posteriors and natural-looking True-Blend anteriors and see how securely that upper and lower will seat in the mouth and how natural they'll look.

Give your patient a denture that won't slip, trip, or cause him soreness, one that looks well, that masticates efficiently and he'll rush right out and tell his friends and neighbors what a good denture you made for him.

. . . Dental laboratory men from all over the United States tell us True-Kusp posterior teeth do not crack or check in the processing of a denture. You can reduce to a virtual zero losses from posteriors damaged in processing when you make a TRUE-BLEND, True-Kusp denture. The transverse cutters which give increased efficiency in mastication also strengthen the tooth against cracking and checking in processing.

NO OTHER POSTERIOR TOOTH HAS BEEN ABLE TO EQUAL--

1. **The efficiency and thoroughness of mastication of Myerson's True-Kusp.**
2. **The aesthetic effect of True-Kusp, similar to worn natural teeth.**
3. **The easy cutting of food with sharp wedge cutters.**
4. **The thorough mastication with flat milling surfaces.**
5. **The easy set-up in perfect balanced articulation.**
6. **The adaptability to normal cross-bite conditions.**
7. **The test of 12 years' successful use in thousands of cases.**

IDEAL TOOTH INCORPORATED

(*Continued from page* 438)

intention; but they were aborted by pomposity and pretentiousness. At times they do a good job; but often many of the men practicing dentistry who are not affiliated with either College are resentful of the Colleges' high-tone carryings-on. Even the most enthusiastic Fellows agree when cornered that admission to either College should be on the basis of specific professional qualifications and distinguished contributions to dental science. An elastic imagination is required to see how some of the present Fellows of either College, including, unfortunately, some of the officers, ever reached the high places. When a man has never written an article, never read a paper, never given a clinic, never furthered the progress of the profession—there is some reason to suspect that his professional skills are not the highest or that his talents are along political lines or that he is lazy and selfish. If the Colleges wish to ascend in the estimate of the profession, they will make their membership open to all people who are professionally qualified. Let the requirements be stiff and high, but let it be known that anyone who works hard and contributes with distinction can become a Fellow.

In the hush-hush of convention corridors, dentists seem to agree that membership in both the Colleges is often a pay-off of political debts. And, of course, the less said about the vendetta between the two Colleges, the better. One of the Colleges decreed than none of its members could belong to the other. That is as silly as saying that a person can't be a Rotarian and a member of the Elks. When membership in any group is on a "You can't do" basis, the shadow of dictatorship is lurking in the background.

Caries Control Program . . .

The American Dental Association has taken a forward step in proposing

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(*Continued from page* 443)

a National Caries Control Program. This entire program is based on the concept that dental caries is a controllable if not an entirely preventable disease; and that furthermore, the responsibility for the control of this disease is one for the community, the government, and all the people, and is not, therefore, the sole responsibility of the dental profession. Heretofore, the sufferers from the disease, paradoxically, have shown no disposition to wish to control it; whereas the people who have to treat dental caries have been the ones to do all the talking about preventing the condition. In no other field, except the medical arts, do we find people consecrating their lives to making the profession that they practice less necessary. Try to think of any business concentrating on destroying its markets!

This National Caries Control Program was suggested by Dean John T. O'Rourke of the University of Louisville, and was presented to the American Dental Association by the National Health Program Committee under the chairmanship of Dean Leroy M. S. Miner of Harvard. In presenting the plan to the House of Delegates, President Oren Oliver discussed nine phases of the contemplated program in these words:

"1. The term 'control' is used in the same sense as it is used in 'cancer control' where the cause is not known, because 'while dentistry does not yet possess knowledge to prevent dental caries, means are at hand for the control of this widespread condition.

"2. Dentistry should be able to control dental caries to a substantial degree if steps are taken toward effective utilization of this knowledge. Neglect to translate this knowledge into effective action . . . is equivalent to the implication that the public would be as well off without immunization against smallpox, diphtheria, typhoid and the like.

"3. Governmental agencies 'should lend their aid toward the utilization of this knowledge, instead of promoting plans which would lead to a rapid expansion of dental personnel or plans which are based on the incorrect assumption that the best way out of the caries problem is to lower the cost of dental service . . . If the incidence of dental caries can be reduced, even 10 per cent, this in itself would be equivalent to the effect of increasing the dental personnel and lowering the cost of dental service in terms of public benefit.

"4. The caries control program would involve: widespread use of the term 'control' and what it means; early and frequent dental inspection and care; consideration of nutritional relationships; mouth hygiene and dental health education.

"5. The caries control problem implies 'that dentistry will mobilize or assemble the forces at hand which will lend themselves to substantial caries control, rather than try to proceed alone.'

"6. For the practicing dentist, 'while it is true that in many cases control service would be substituted for gross service to children, this would represent only a change in character of service and would have no depressing effect upon the income of the dentist. In fact, control service would be more pleasant than restorative service and more productive of social good."

"7. Owing to the fact that the life expectancy span has increased from 35 to 62 years, our dental problems are not solved by early death, as they were a century ago, and we now have the responsibility for doing all we can to preserve the denture over a period nearly twice as long as was the case in 1840.

"8. First step should be calling of a conference of research workers to determine 'the extent to which dental caries may be controlled by utilization of our existing worthwhile knowledge' and then presentation of a program at another conference of all those 'who would have the responsibility of aiding' in the program.

"9. The caries control program will act 'as a buffer against many of the social pressures which will come into existence in the post-war period.' The Association 'must now take the initiative instead of limiting its efforts to active and passive resistance to changes advocated by persons unfamiliar with the field of dentistry or its problems.' "

We have previously remarked in this column that we have more than the mere apathy of the public to overcome in advancing a caries control program. We have the powerful vested interests that stand to make many millions of dollars under the present method of food distribution. Let us look at some of these interests: There are the millers, the sugar refiners, the soft drink manufacturers, and the candy makers—all these people make products that adversely affect dental health. Standing at their side are the representatives of the great publications who advertise these food products and the radio networks that shout these wares over the air waves. Suppose the Council on Dental Health of the American Dental Association finds that caries can only be controlled by radical dietary reforms —reforms that will change the pattern of food consumption of the American people. Then we will find that these vested interests will permeate the halls of Congress and that legislation contrary to their interests will be hard to secure. After this program has been explored in all its ramifications, we will find that we are up against more than the control of a single disease entity. We will be face to face with a required change in the entire national economy. —E. J. R.

AN INSTITUTE OF WAR MEDICINE AND SURGERY FOR DENTISTS SPONSORED BY THE CHICAGO DENTAL SOCIETY IS TO BE HELD OCTOBER 26, 27, 28, 29, 1942, in The John B. Murphy Memorial Hall of the American College of Surgeons, 50 East Erie Street, Chicago.

Fee:* $20.00 *Payable to The Chicago Dental Society, 30 North Michigan Avenue, Chicago.

DENTAL MEETING

Dates

Montreal Dental Club, eighteenth annual clinic, Mount Royal Hotel, Montreal, September 23-25.

•

Montreal Dental Club, fourth wartime Fall Clinic, Mount Royal Hotel, Montreal, Canada, September 23-25.

•

American Dietetic Association, Detroit, Mich., October 19-22.

•

The American Society for the Advancement of General Anesthesia in Dentistry, annual fall meeting, Midston House, New York, October 26.

•

The New York Society for Oral Diagnosis, regular meeting, Squibb Hall, New York City, October 21.

•

Odontological Society of Western Pennsylvania, Pittsburgh, November 3-5.

•

New York Society of Orthodontists, New York, November 9-10.

•

American Association for the Advancement of Oral Diagnosis, Boston, Mass., November 12-13.

•

Ohio State Dental Association, annual meeting, Cincinnati, November 9-11.

•

Greater New York Dental Meeting, New York, December 7-11.

•

American Association for the Advancement of Science (Dental Subsection), New York, December 28.

•

District of Columbia Dental Society, second and fourth Tuesdays in each month, from October to June at the United States Public Health Service Auditorium, Washington.

•

Chicago Dental Society, February 22-25, 1943.

•

Pacific Coast Society of Orthodontists, San Francisco, Calif., February 22-24, 1943.

American Association of Orthodontists, Chicago, May 3-6, 1943.

•

Connecticut Dental Commission, regular meeting, Hartford, November 17-21. For information write to Doctor C. G. Brooks, Recorder, New London.

•

Ohio State Dental Board of Examiners, regular meeting, Ohio State Uni-

versity, College of Dentistry, week of October 19. For information write to Dr. Earl D. Lowry, Secretary, 79 East State Street, Columbus.

•

Virginia State Board of Dental Examiners, regular meeting, Medical College of Virginia, Richmond, March 30. For information write to Doctor John M. Hughes, Secretary, 715 Medical Arts Building, Richmond.

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New Jersey State Board of Dental Examiners, regular meeting, September 15-19. The Spring meeting will be held April 5-10, 1943. For information write to Doctor W. E. Wilson, Secretary, 150 East State Street, Trenton.

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